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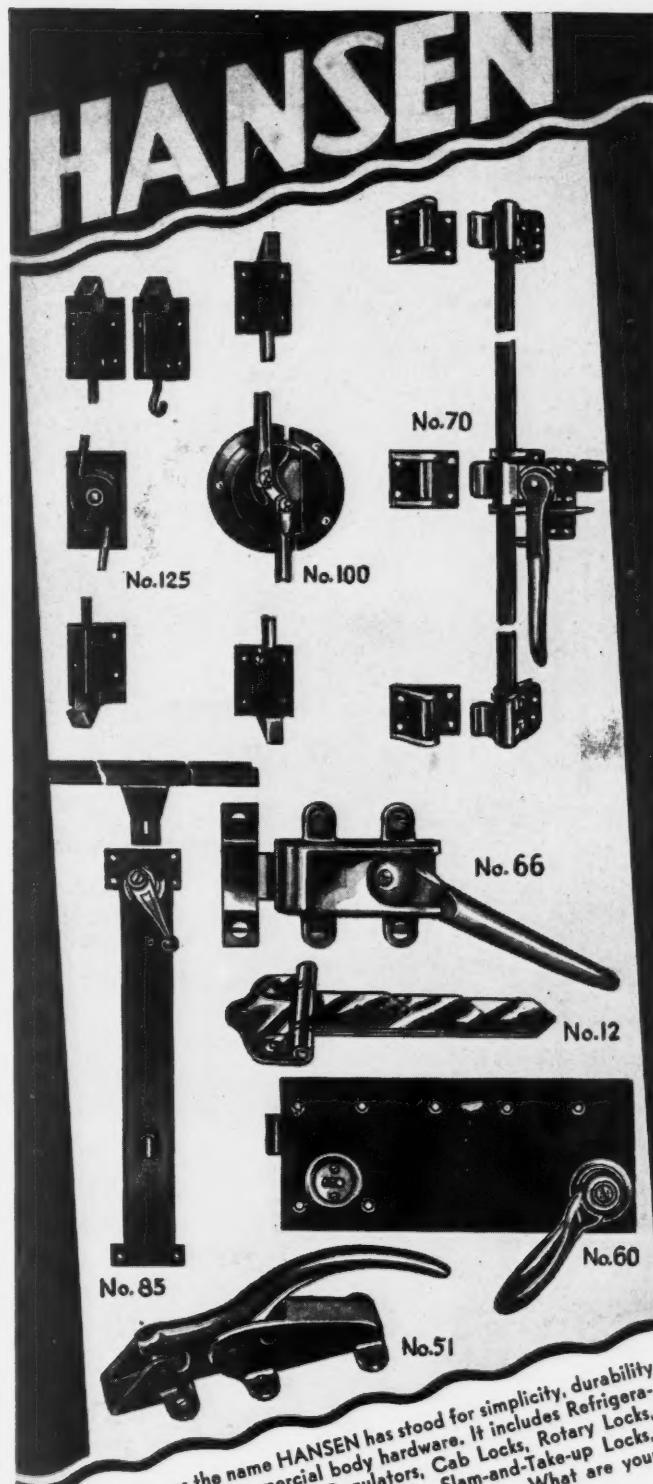
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COMMERCIAL CAR JOURNAL

JANUARY, 1938

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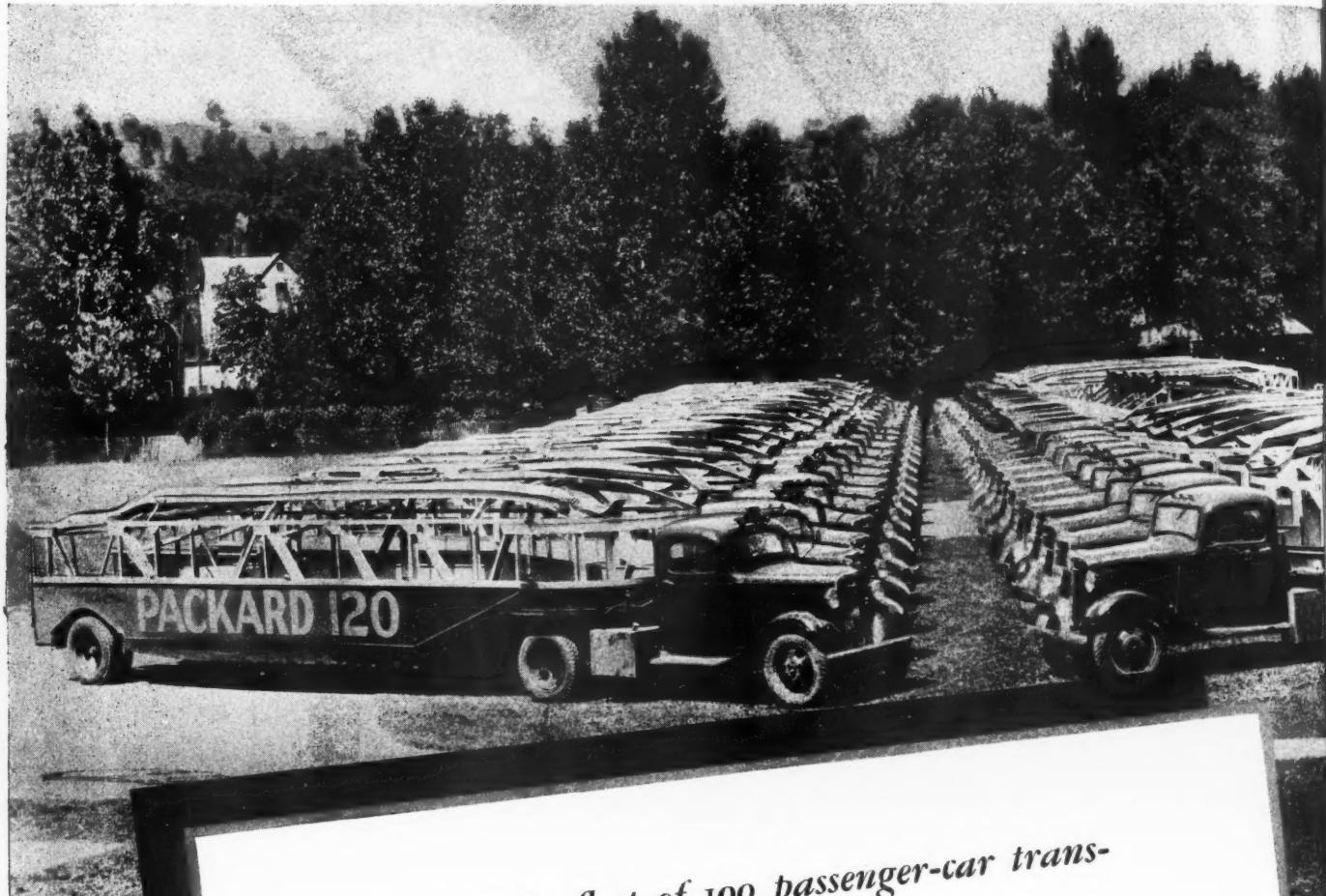
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COMMERCIAL CAR JOURNAL

VOL. LIV, NO. 5



JANUARY, 1938

THE OVER LOAD

Model Generosity

A year ago we published our first review of economy cars for fleets. We promised readers then that it would be an annual feature. We redeem that promise in this issue with "Miser Models." We're kind of stuck on that title and we're going to use it as a term for economy models from here in. Next year we'll give you another review of miser models.

Business Is Good

The Shop Hints counter has not felt the business recession. Business continues good. It's just as easy as it ever was for fleet shop men to pick up extra five-spots for their extra-fine ideas. The Shop Hints counter in this issue is on aisles 20 and 21.

Capitol Punishment

Neither is there a let up in our Washington Bureau to judge by this month's "Capitol in Business." Reports on a Congressional superhighway plan, the I.C.C. freight rate hearing and miscellaneous items are in this issue. If you are concerned about the size and weight investigation which the Interstate Commerce Commission has authorized, just relax. Our Washington Bureau will keep you posted with complete details. And, by the way, if there is anything particular you want to know don't wait for the issue to reach you; write or wire us and we'll give you personal service.

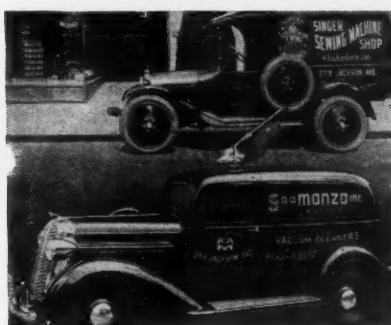
March Marches In

Washington—the state—contributes this month's "Fighting Snow in the Northwest" article. What have other State Highway Departments to contribute? Our pages are wide open to them. The logging story we promised you last month has been definitely scheduled for the March issue. After you've enjoyed it, your wife or anybody's wife, if you're that kind of a fellow, will also find it enjoyable. It's that kind of a story.

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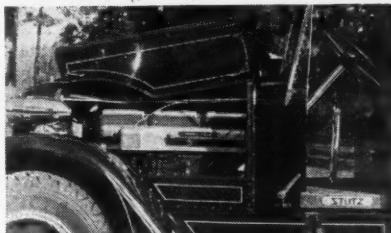
Truck Equipment Co. had this demonstrator at the Newark show. Up on the hard steel seats, visitors found the going tough when Truxmore's gravity springs were locked out



The handsome '22 Dodge paid for itself in advertising value after three years according to its owner. By the same scale the '37 job ought to take approximately three weeks



Piece de resistance of this body for J. D. Loizeaux Lumber Co., Plainfield, N. J., is the "Loryflor"—an endless-belt-type floor which cranks the load rearwards. Easton Car & Construction Co., Easton, Pa., is the maker



The title of first diesel fire fighter in America goes to this new Stutz, model FD powered by a six-cylinder, 150 h.p. Cummins engine

motive taxes. That boils down to 15 cents an hour and fleet men might do some boiling too if they were to figure their automotive taxes on the same basis.

And Greetings Y'All

A Happy New Year to you, and may your taxes be less.

MISER MODELS

.... Go On Parade All Dressed Up In Economical Designs So That

ONLY a few years ago fleet men were ingeniously working out appliances for the passenger cars in their fleets, the sole object of which was to make the cars operate economically. Just before this process began individual operation and fleet operation started to go separate ways, the individual wanting a high order of performance and the fleet wanting less performance and more economy. The passenger car manufacturer feeling that his first duty was to the individual operator produced a vehicle of increasing performance and left the fleet operator to shift for himself.

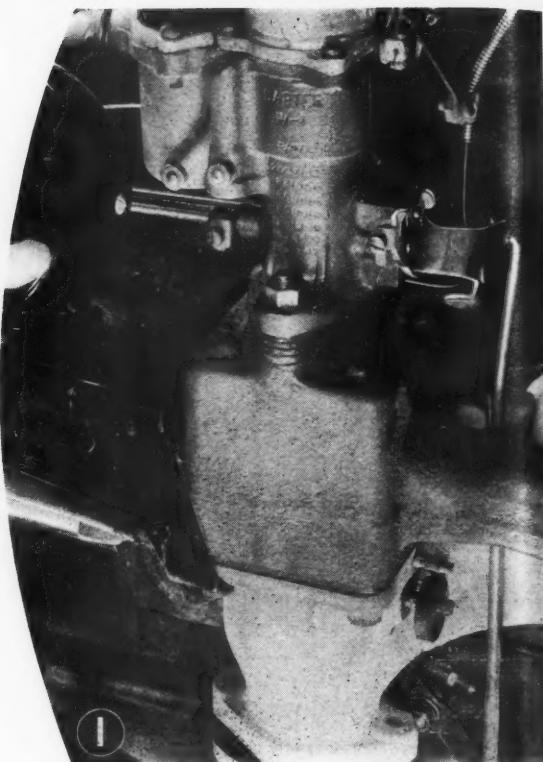
So well did the fleet fraternity shift that in a short time it had installed throttle stops, restriction plates, manifold shields, smaller carburetor jets, etc., which choked off part of the performance and consequently reduced the cost of operation. These appliances were adopted by the factories as part of the car which was merchandised to fleet operators, to which were added favorable gear ratios, smaller carburetors and in some cases higher compression cylinder heads.

In a few short years economy pack-

ages have become a standardized part of the fleet vehicle. They are applied at the factory where it can be done in more workmanlike manner and fleets can now operate economically adaptations of the cars which have enough performance to please the public without paying the penalty for this performance which they do not want and do not get.

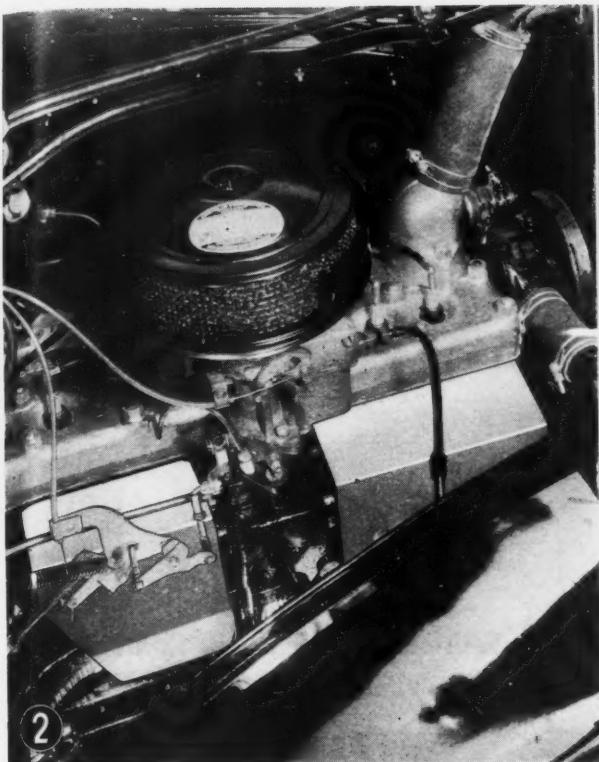
CHEVROLET has several economy options. Such models are identified by a plate on the instrument panel which reads, "Performance and speed of this vehicle have been curtailed to obtain lower operating cost." There is also a plate attached to the rocker arm cover which gives tune up specifications where they vary from standard.

A smaller carburetor is used, the main venturi of which is $1 \frac{1}{16}$ in. in diameter instead of $1 \frac{1}{4}$ in., the standard size. The main jet is smaller, 0.0835 in., and a special metering rod is used to bring the calibration to the most efficient point at the various speeds and loads. A throttle stop is also provided.

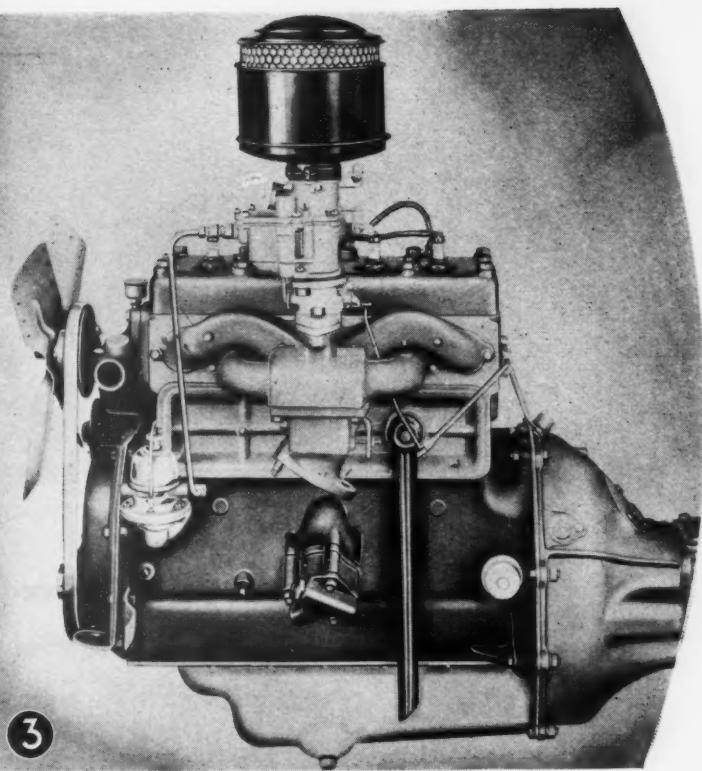


For hilly regions provision has been made for removing the throttle stop and installing a new throttle rod for full power restoration. However, due to the smaller venturi maximum speed is reduced about 5 m.p.h. and acceleration is cut somewhat.

A sheet metal cover incloses the front half of both inlet and exhaust manifolds to increase the temperature of the fuel mixture and the thermostat in the cylinder block water outlet is set for 162 deg. Where desirable it is possible to have a velocity type governor installed adjustable in the range from 1400 r.p.m. to 3000 r.p.m. The pas-

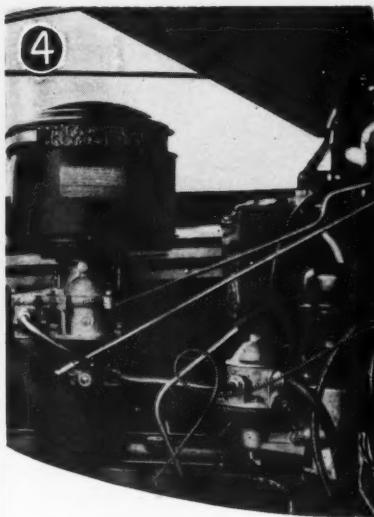


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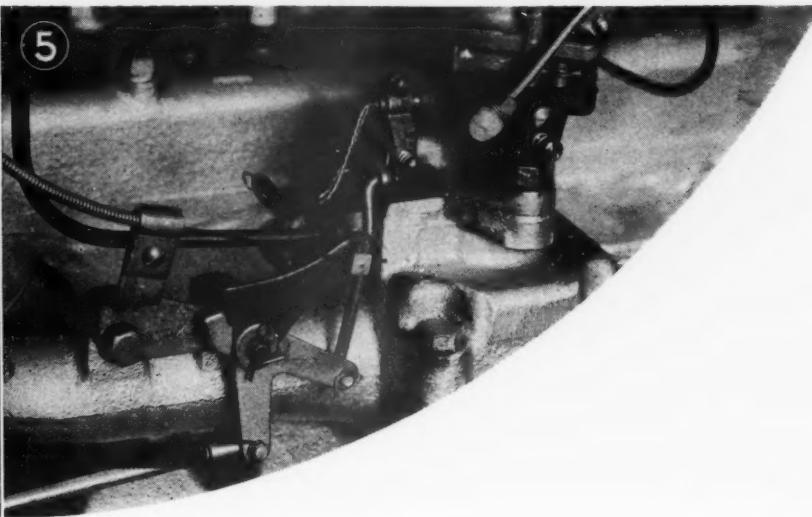


3

Fleet Operators May Get More Miles From Hard-earned Dollars



4



5

By *Joseph Geschelin*

senger car has a 3.73 to 1 axle ratio and the 1½-ton truck has a 6.16 ratio. The ½-ton has a 4.11 ratio and a 3.82 option. On the ¾-ton truck a 4.11 ratio is used. Economy engine serial numbers are prefixed by the letter "V" in the passenger cars and sedan delivery. One-half and ¾ to 1 ton trucks by "VK" and the 1½-ton truck by "VT."

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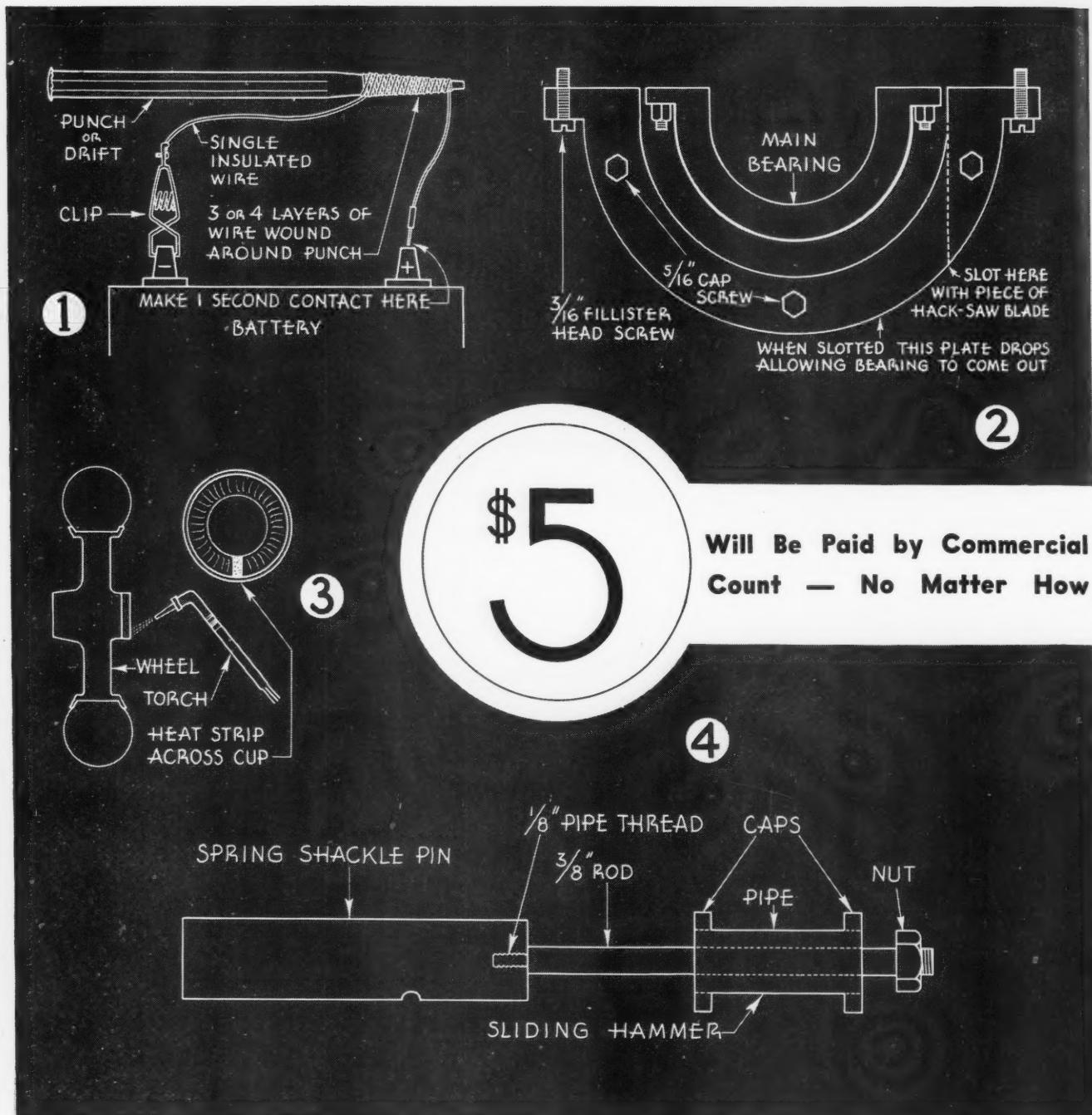
FORD again offers two completely different engines, the 60 hp. and the 85 hp. The 60 hp. engine comes in passenger cars and the ½-ton truck and 1-ton truck without any changes at all since the reason for producing this engine was for its inherent economy. The standard axle ratio used with this engine is 4.44 and there is an option of

Chevrolet (1) and Plymouth (2) economy models feature smaller carburetors and special manifold shielding. The Willys (3) and 60 h.p. Ford (4) being inherently designed for economy need no changes, while Dodge (5) offers a 1 in. carburetor and sealed throttle stop on commercial cars and trucks

4.11 to 1. The 1-ton truck carries a 6.67 ratio when equipped with this engine.

On the 85 hp. engine Ford has an economy carburetor which has a 13/16 in. throttle opening with an 0.81 in. venturi and 0.035 in. jets. This setting replaces the standard setting of 0.97 in.

(TURN TO PAGE 84, PLEASE)



1. Magnetized Punch

By John C. Zegalia

Coca-Cola Bottling Co., Bethlehem, Pa.

Take a battery clip and a piece of insulated wire about 36 in. long, radio lead wire is satisfactory, and attach battery clip on one end. Wrap wire around drift or punch close to the end, making 6 or 8 turns to the layer and 3 or 4 layers. Connect battery clip to battery and touch bare other end of wire to the opposite post of the battery for a second or so and the tool is magnetized enough to pick up $\frac{1}{2}$ and $\frac{1}{4}$ in. nuts that cannot be reached with the fingers.

2. Main Bearing Shortcut

By E. H. Morgan

Oklahoma City, Okla.

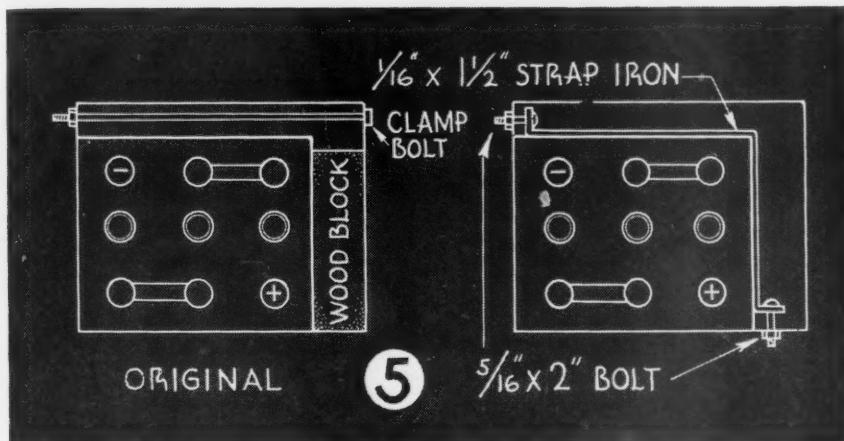
On some of our trucks it is necessary to remove the radiator to work on the front main bearing unless this procedure is followed. Cut the aluminum plate (illustrated) on the dotted line with a short piece of hacksaw blade and remove the two $\frac{5}{16}$ in. capscrews and one $\frac{3}{16}$ in. fillister head screw and plate will fall away, giving access to the bearing. When replacing fill hacksaw groove with Permatex. We have done this many times and have had good results each time.

3. To Remove Bearing Cup

By Frank P. Coulomb

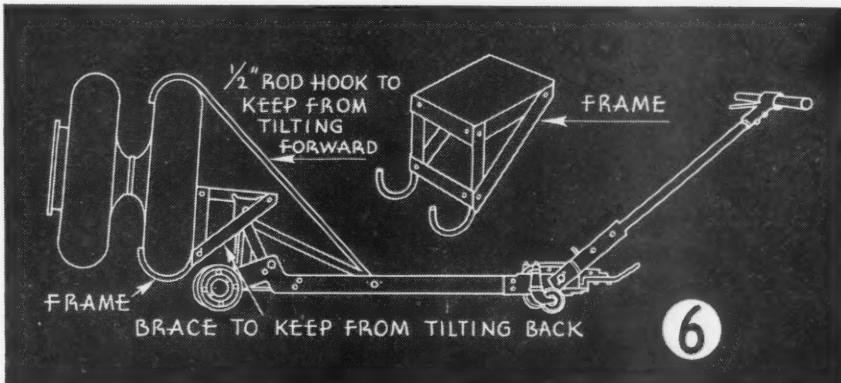
Emsco Concrete Cutting Corp., Los Angeles

Sometimes it seems impossible to remove the bearing cup from a wheel without destroying both. A simple way to do the job is to heat a narrow strip across the bearing cup with a torch. After the cup-heated portion is red hot cool it off with water. The result is that the metal will shrink and the cup will be loose. In some cases the cup will almost fall out. The trick is to confine the heat to a narrow strip and cool it fast. The whole operation should take only a few minutes.



Car Journal for Each Shop Hint Accepted. Ideas Rough. We Will Polish Them Up for Publication

SHOP HINTS FROM FLEET SHOPS



COMMERCIAL CAR JOURNAL
JANUARY, 1938

4. To Remove Shackle Pins

By August M. Schmitz

Hertz Drivurself Stations, Milwaukee, Wis.

Removing shackle pins from the rear springs of some of the newer trucks with the clamp tight style of shackle is quite a job. We made a tool for this job by taking a piece of $\frac{3}{8}$ in. rod 30 in. long. We cut a $\frac{1}{8}$ in. pipe thread on one end and a $\frac{3}{8}$ SAE on the other upon which we screwed a nut and then peened it over. Next a piece of $1\frac{1}{2}$ in. pipe capped on both ends and drilled $\frac{7}{16}$ in. was put on the rod to complete a sliding hammer. Now, to remove the pin, we remove the locking bolt and grease fitting and turn the rod into the grease fitting threads and a few sharp blows pull it out.

5. Battery Clamp

By Walter Fraas

Geo. F. Burt Fruit Co., Lincoln, Neb.

We have had considerable trouble with batteries mounted on the running board in an oversize box on some of our trucks. The batteries are originally blocked into place with a block of wood which either swells from dampness, and then you cannot remove the battery, or it dries out and permits the battery to shake itself to pieces.

We have replaced this block with a piece of strap iron and two bolts which hold the battery very well. This arrangement is very simple, as shown in the illustration. It takes little time to make and costs are negligible.

6. Wheel Jack

By Carson P. Reed

Red Bell Motor Freight Lines, Dallas, Texas

Replacing dual wheels is a pretty heavy job if you do not have a jack to do the lifting. We fitted our floor jack with a fixture to hold wheels and a brace to keep the wheel from tilting. Most of the frame is made from old spring leaves but the hooks and brace are made of $\frac{1}{2}$ in. rod. Details are given in the illustration.



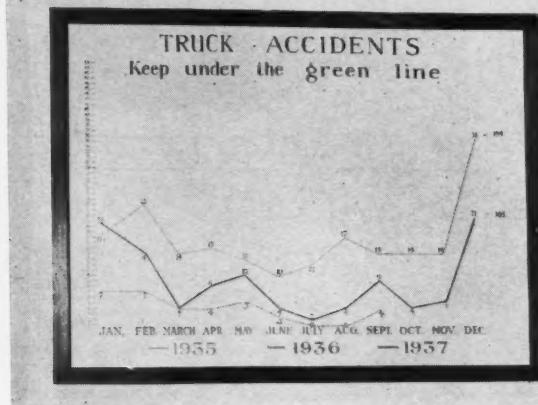
Marshall Field's Raw Recruits Are Picked on a Four-Point Plan and

**SHOPPING FOR
CHAUFFEURS**

By T. B. JOHNSON



**General Superintendent of Deliveries,
Marshall Field & Co., Chicago**



Then Trained, Tested and Fed a Scientific Diet of Safety Factors

WHEN hiring and training drivers for our motor vehicle fleet of 276 units, we constantly keep in mind four specific standards to which we think our drivers should conform.

First, they must have the general qualifications of good salesmen.

Second, they must be able to handle their equipment efficiently.

Third, they must be willing to observe the principles of safety in their driving.

Fourth, they must have a constant interest in self-improvement.

Excepting in cases of emergency, we never hire trained drivers from outside of our own organization. All of our potential drivers begin first as "auto-boys" on our parcel delivery trucks, or as furniture helpers on our furniture vans and trucks, or helpers on our tractor semi-trailer units. Our present fleet includes eight tractors for the shuttle operations of our 27 semi-trailers; 184 parcel delivery trucks, including 60 in reserve for pre-Christ-

Clean shave, well-pressed pants and a good shoe shine are prerequisites of the daily inspection, above left. Top right, the Kangaroo Court listens to the prosecuting attorney while Judge Thomas presides, and below, a graphic story of the accident record

mas use and special sales; and the remainder are furniture trucks, including 10 van jobs.

All auto-boys and helpers must come well recommended, and be at least 17 years of age. They must have public school education, and preferably some high school training. They must be qualified sufficiently in arithmetic and writing to keep the records essential to a driver's job. They must have an agreeable personality and use good conversational language. They must pass a general health examination, with special attention to heart, lungs, eye-sight, hearing, nervous stability, hernia, general body nutrition.

As the first step in their training, we impress upon them the importance of their job as a prospective company

driver. We emphasize that all company customers and potential customers—and this includes nearly everybody—must be always treated with the greatest respect. No matter how wrong a customer may be, the driver must always assume that the customer is right.

During the first six months of his employment the auto-boy or helper is on probation. He is put on the kind of truck for which he seems to be best fitted; that is, if he is of the husky type he will be assigned to a furniture or other large truck where his strength will count for most. Some of the qualities which may cause his release during this probation period are the display of a headstrong nature which refuses to take advice or do as told by his superiors, or the show of a careless or lazy streak. He must also prove his ability to fit in with the family spirit which we try to maintain among all our drivers and supervisors.

If he continues we gradually give
(TURN TO PAGE 88, PLEASE)

Here Are Some Causes and Remedies for Poor Marksmanship with the

IT'S ONE THING

to know the tricks of painting, and anyone can spot trouble when it comes, but to know the cause and the remedy when you get in a jam with the spray gun, air transformer, pressure feed tank or suction feed cup is something else again. Here are the answers in rapid-fire form.

SHOOTING TRIGGER TRICK TROUBLES

THE story of trigger tricks with the spray gun would be only half told were we to stop the September issue with the tricks themselves, as described in. Sometimes during the slight o' hand with the spray gun the rabbit refuses to come out and then we have to look inside to see what went wrong. Therefore, trouble shooting trigger tricks with the spray

gun is a logical follow-up to the tricks themselves.

Grief in the paint shop may be the result of improper care of equipment, dirty spray room, improper adjustment of the gun, wear and tear of equipment and many other factors.

Some things to watch out for are:

Too rapid use of the spray gun at first. Learn to adjust it and manipulate it and the speed will follow. Don't use higher air pressure than needed as it creates excessive mist about the main body of the spray and gives poor results.

The pressure feed tank, after being

FLUTTERING

AIR LEAKS

SPLIT SPRAY

FLUID LEAKS

regulated to the desired pressure, maintains it automatically. If air is let into the tank too quickly by rapid turning of the adjusting screw, the force of air will squirt the liquid over the inside of the tank and clog up the passages.

If the air hose is allowed to become kinked, a sharp pull on it will exaggerate the strain and pressure and may lead to trouble. Vent holes should be kept clear and the safety valve in the compressor should be cleaned regularly.

To clean the gun itself, detach the paint container and place the paint tube into a retainer filled with thinner. Pull the air lever until thinner issues

Spray Gun for Trigger Men Who Want to Improve Their Beauty Score



clear through the nozzle. This must always be done before changing colors or at the finish of the job. It is well to unscrew the lock nut and dip the spray head into thinner. Air should then be blown through the gun after withdrawing it from the thinner to dry it. Failure to clean the gun or to strain the paint will sometimes cause the paint passage to become clogged. This is indicated by an irregular spray or by a sputtering effect which occurs at the nozzle and can be temporarily relieved by turning the atomizer and placing the finger over the end of the nozzle to prevent air from escaping. With the

finger over the nozzle, pull back the air lever. This will reverse the flow of air and will usually force any obstruction back into the container. However, the real corrective procedure is to clean the equipment.

To clean the exterior of the gun, wipe clean with a rag moistened with thinner, then blow out all parts with a duster or blow gun which is a small, push button air pistol operating from the air transformer, using $\frac{1}{4}$ -in. hose.

Without the proper volume and pressure of compressed air the spray gun cannot be expected to perform tricks for you. It is important to give con-

By
Stanley Gerstlin

sideration to the factors of volume and pressure when selecting a compressor. Remember that the rated displacement of the compressor is not the volume of delivered air. Volume is expressed in cu. ft. per

(TURN TO PAGE 60)



MR. EASTMAN SAYS

1. "The declaration of policy within the Motor Carrier Act is so broad in its terms that it would be difficult to set aside any specific action of the Commission on the ground that it was in violation or disregard of this policy."
2. "The public interest requires more than the mere protection of shippers, travelers, employees . . . against extortion, injustices and dangerous conditions. It is as necessary to have efficient carriers who can keep up with the times."
3. "The Motor Carrier Bureau, unless it can secure financial relief, is in serious danger of bogging down, notwithstanding that our staff has put in an extraordinary amount of overtime for which, unlike some others, it receives no pay."



By

Hall Johnston

Attorney-At-Law, Washington, D. C.
Former ICC Senior Attorney-Examiner

An Analysis of the Former Coordinator's Ideas of the Motor Carrier Act and Its Administration

AS has been remarked before in these articles, there has been a growing thought, both in the motor carrier industry and in Government circles, that the task of regulating buses and trucks may prove too great for the Interstate Commerce Commission as presently organized. Once before, when ICC officials predicted that it would require three years in which to complete a valuation of the railroads, forecasts went wrong. Fifteen years later, values were being declared on equipment obsolescent for more than 10 years, much of it already worn out and discarded. It is not surprising that motor carrier

supervision has almost stalled Commission machinery. That there is not more confusion in the minds of both the Commission and the industry in these beginning months of motor carrier regulation is due to the seriousness with which Commissioner Rogers, as the Director of the Bureau, attacked a very big job, and to the experience and sound judgment he brought to the task. Only his careful selection of the key men now on the Bureau staff has enabled it to function at all.

Commissioner Joseph B. Eastman, speaking before the American Transit
(TURN TO PAGE 68, PLEASE)

ALL existing roads would be turned over to truck and bus travel while the ordinary motorist would enjoy the luxury of superhighways connecting key cities under a plan advanced for study by Senator Lonergan, Democrat, of Connecticut, and now under consideration by the Bureau of Public Roads.

Described as a system of self-liquidating highways, the plan will be embodied in legislation if no serious objections are raised against it, and while trucks and buses would not be banned from the new roads they would be subject to "a mileage charge" of one-half to one cent a mile along with the other motorists.

One of the features of the plan, as pointed out by the Senator, is that tourists willing to pay the cost of using the luxury road would be freed from bus and truck lanes and railroad grade crossings. The Senator discounted the theory that the fee constituted a "toll charge," explaining that motorists would be free to use the old roads if they preferred.

Advanced primarily as a safety measure and as a means of stimulating reemployment, the program would be financed by the issuance of Govern-

ment highway bonds, bearing 3 percent interest, but without tax exemption. Funds raised in this manner would defray construction costs of super roads, adequately lighted at night, and following airline routes connecting metropolitan centers.

The cost would be liquidated through the mileage charge, Lonergan said.

He discounted the possibility of serious competition with private enterprise and said it would not seriously affect common carriers, "since it would merely divert from present highways that portion of the traffic willing to pay for the convenient superhighway through routes."

Highway experts in Washington scoff at the idea, pointing out that only in a few cases in the country can there be found sufficient volume of traffic to pay the cost. On the other hand, the Connecticut Senator insists that one-third of the motorists driving the 5000 to 15,000 cars per mile on main highways could be expected to travel the new roads and, in his opinion, that would constitute a sufficient volume of traffic to finance the program. He cited

(TURN TO PAGE 84, PLEASE)

THIS MONTH: A Connecticut Senator introduces a new version of the superhighway plan . . . The trucking industry makes a plea to the ICC for increased rates . . . Pettingill long-and-short haul bill is slated for Senate hearing . . . The budget-balancing plan of cutting highway appropriations meets opposition . . . the ICC sets no date for size and weight hearing.

CAPITOL IN BUSINESS



BY

L. W. MOFFET &
JAMES G. ELLIS

*Washington
Editors*

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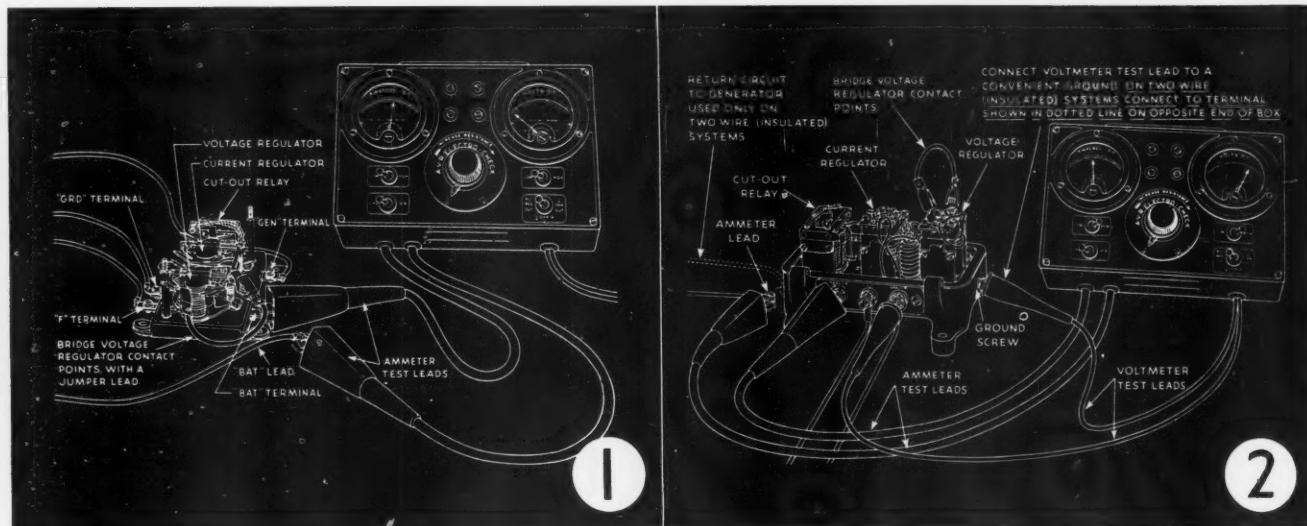
RNAL
1938

ENDORSED

CHECKS

ON GENERATING ILLS

Guaranteed by Delco-Remy Not to Bounce in Spotting Trouble in Voltage &



BECAUSE doubt exists in the minds of some fleet men as to the proper operation and function of regulators, the regulator is many times blamed for trouble which is due to the improper functioning of other equipment in the electrical circuit. To locate trouble in the generating system, and to determine if the regulator is operating satisfactorily, the following procedure has been developed. The various conditions which may arise are listed, with the procedure for checking listed under each condition.

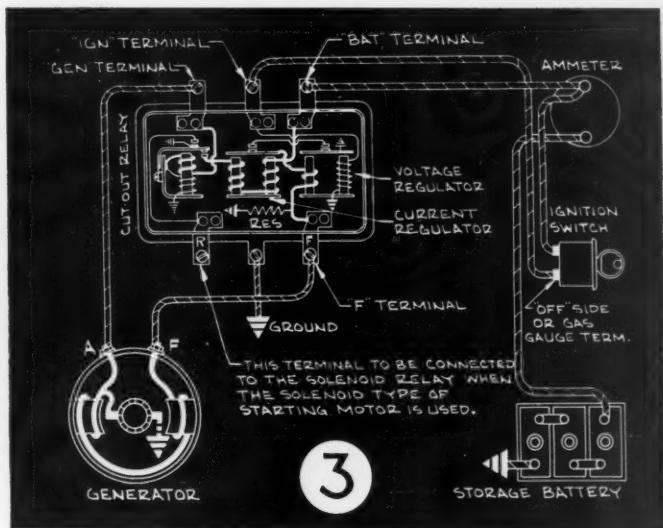
1. A Fully Charged Battery and a Low Charging Rate indicates the generator and the voltage regulator unit are functioning properly, since it is the regulator's function to reduce the charging rate as the battery becomes charged. To check the voltage regulator unit, note the charging rate at a medium generator speed, turn the engine off and use the starting motor for about 10 sec., and then with the engine running at

a medium speed, note the charging rate. Since using the starting motor has somewhat reduced the battery voltage, a properly operating voltage regulator unit should allow the charging rate to increase for a short time.

With a three unit regulator, to check the current regulator unit, bridge the voltage regulator unit contact points with a jumper lead to prevent the voltage regulator unit from operating and influencing the generator output. (Figs. 1 and 2.) Turn on the lights and other electrical load and increase generator speed until the output remains constant. The output is now the value for which the current regulator unit is set. Use a test ammeter in series in the charging circuit to check the output. If the output does not come up to the specified value, the current regulator setting is probably low, although there may be other conditions which might prevent the generator output from com-



Current Regulated Systems

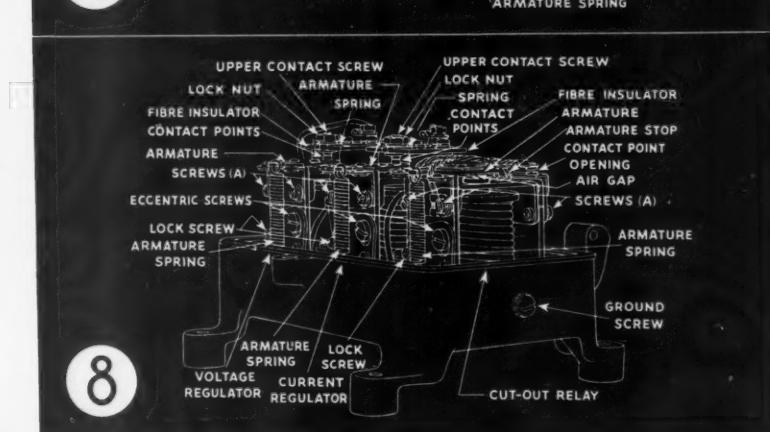
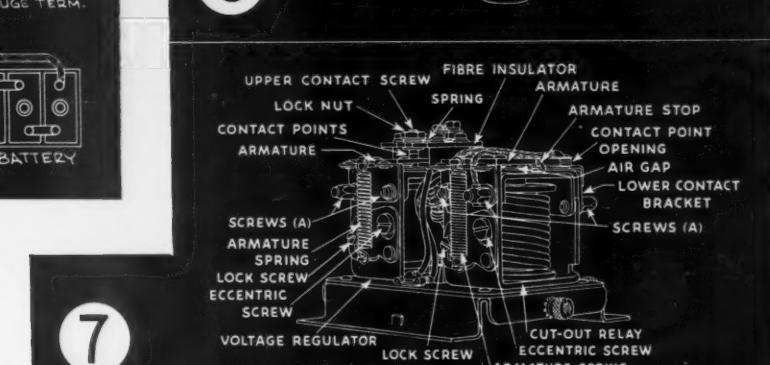
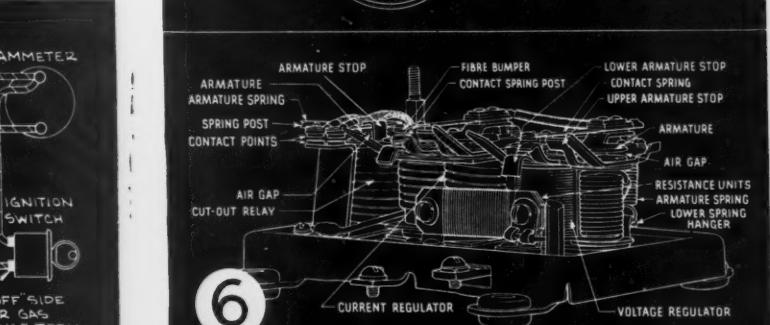
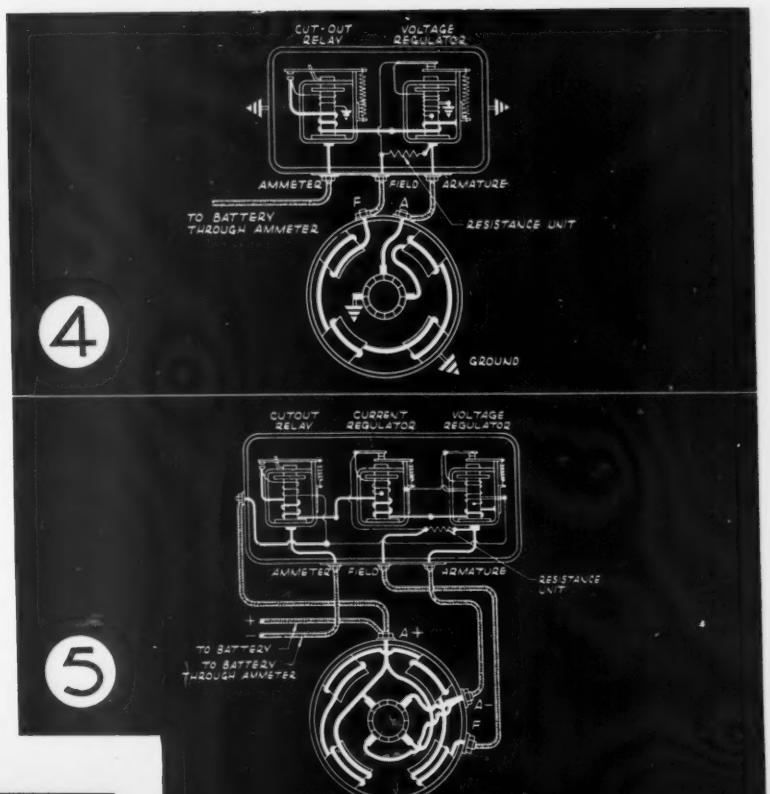


ing up to its specified value. If it is impossible to adjust the current regulator unit to increase the output to the specified value, check for these other conditions as outlined under section 3 below.

If the output increases beyond the specified value, depress the current regulator unit armature manually, opening the contact points. This inserts the resistance into the generator field circuit and should cause the generator output to drop. If the output does drop, it indicates the current regulator unit setting is too high and must be reduced. (A defective current regulator winding assembly would pre-

(TURN TO PAGE 74, PLEASE)

COMMERCIAL CAR JOURNAL
JANUARY, 1938



AFTER HOURS

EDITORIAL COMMENT BY GEORGE T. HOOK, EDITOR

Regarding Drivers' Hours of Service

UP to the moment of writing the Interstate Commerce Commission has not issued the expected regulations on hours of service of truck drivers. It appears that the regulations will be issued either late in December or very early in January.

Operators can be assured definitely that although the Examiner in charge of the hours of service hearings recommended that the regulations be made effective as of Jan. 1, 1938, such will not be the case. The industry will be given ample time in which to prepare itself for the hours of service prescribed.

The delay in issuing the regulations seems to indicate that the ICC is weighing well the differences of opinion stimulated by Examiner Snow's recommendation of a weekly maximum of 60 hours and a maximum of 15 hours on duty in any 24.

AT the final hearing on the Examiner's report organized labor made an emi-

nently logical suggestion which, if followed, would postpone definitely-prescribed hours for some time. This suggestion was that a thorough study of the relationship between driver fatigue and the safety factor be undertaken before any hours of service ruling is made. T. P. O'Brien, representing the A. F. of L. teamsters, chauffeurs and helpers union, read into the record a letter from Labor Secretary Frances Perkins indicating that such a study could be conducted by her department in cooperation with other governmental agencies. He estimated the time required for such an investigation would be no more than six months.

Previously Commissioner Eastman reported that, according to a survey of various government departments, such a study would require at least a year. Commissioner Rogers revealed that the ICC had contemplated the study when it made its last budget recommendation but withdrew the plans when it found sufficient funds could not be obtained.

MOTOR CARRIER SURVEYS

Surveys are now being considered on the subjects outlined below. Motor carrier executives are invited to indicate the survey subjects in which they are interested and to submit pertinent suggestions. Subjects may be indicated by number noted on the attached coupon, and suggestions by accompanying letters.

- Your Relations with
the I.C.C. and the Government
1. Rights of contract and common carriers and the effect of overlapping of rights granted and those not yet considered.
 2. Insurance coverage for contract and common carriers.
 3. Simplified methods of compliance with I.C.C. regulations.

- Your Relations with
Shippers and Other Carriers
4. Relations of independent operators with

forwarders, brokers, and large operating units.

5. Consolidations and buying and selling of equipment and rights.
6. Financing and expansion for the smaller operators.

The Editor
Commercial Car Journal
Chestnut and Fifty-Sixth Streets
Philadelphia, Pennsylvania

I am interested in the subjects checked as contained in proposals for MOTOR CARRIER SURVEYS.

1. 2. 3. 4. 5. 6.

Name
Title
Firm Name
Address
City

Suggestions are contained in the accompanying letter.

Verne A. Zimmer, director of the Labor Department's Division of Public Statistics, while conceding that it is difficult to measure fatigue of drivers, said a scientific study could be undertaken with reasonable assurance of success. He estimated that on the basis of a revised plan such a study could be finished in less than a year, rather than the two-year period previously estimated by U. S. Public Health Service officials.

The suggestion that a scientific study be made cannot be quarreled with by any sensible person. No one now knows at what point driver fatigue sets in, and what relations that fatigue bears to safe operation. Such investigations as have been made are trashy in the extreme and quite rightly have been ignored by the ICC. There is need for facts and the facts should be provided whether it takes one year, two years or five years. Otherwise regulations will be arbitrary and never satisfactory to all concerned.

HOWEVER, while there is need for the study there is also need for the immediate prescription of maximum hours. State legislatures are delving more and more into this form of regulation and unless the ICC prescribes a maximum that will be uniform for the entire country, the trucking industry is faced with a chaotic condition that may seriously affect its welfare. "Economical and efficient service by motor carriers," which Congress specifically enjoined the ICC to promote is not likely to get far when one state enforces a maximum of 44 hours and an adjoining state has no limitation whatsoever.

A maximum should be prescribed without delay. No great harm—and probably much good—would accrue if the regulations conformed to the recommendations in the Examiner's report. More drastic rules might be too disruptive to the industry at this time. Let regulation begin with 60 hours, the same as for the railroads, and let reductions be made as dictated by experience and scientific study.

Is This Public Opinion?

WITH no more comment than is contained in that sub-head, we give you the following editorial "Side-Tracking Trucks," bearing on truck performance. (TURN TO PAGE 84, PLEASE)

Part 2—Washington: Where Men and Their Radio-Equipped Trucks Put On a \$200,000 Show That Spells Curtains for Old Man Winter



FIGHTING
SNOW
IN THE NORTHWEST

By *Henry W Young*

PLENTY of snow falls in Washington and Oregon. The Cascade Mountains, ranging from north to south through both states and 50 to 100 miles inland, are natural snowmakers. Winds from the Pacific make the low lying coast regions surprisingly warm. But when these winds, still burdened with moisture, rise over the Cascades, exceptionally heavy snowfalls are produced.

Under ordinary conditions in Washington, snowfalls in the mountain passes will approximate as follows:

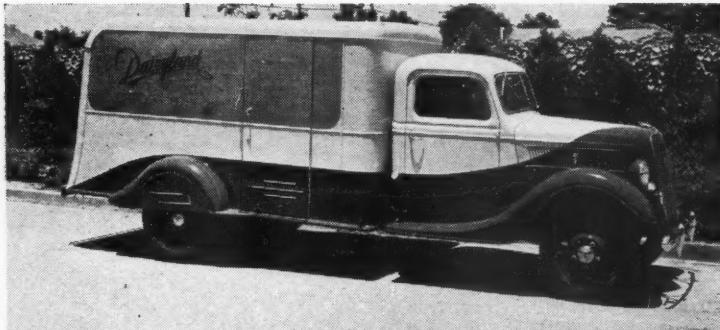
Snoqualmie Pass, State Road No. 2 Elevation 3004 ft. 144 in. of snow
 Blewett Pass, State Road No. 2 Elevation 4071 ft. 75 in. of snow
 Chinook Pass, State Road No. 5 Elevation 5440 ft. 190 in. of snow
 Satus Pass, State Road No. 8 Elevation 3149 ft. 40 in. of snow
 Stevens Pass, State Road No. 15 Elevation 4061 ft. 104 in. of snow

When it comes to drifts and slides, that is another story. Instead of a comfortable blanket of 10 or 12 ft., some places in these high-altitude roads may carry 40 to 50 ft. of snow.

The state of Washington made its first attempt at snow removal in 1923. A contract was let for the removal of snow in Snoqualmie Pass, merely to permit of earlier opening. The amount so spent was \$7,000. In the winter of 1935-'36, there was spent for the removal of snow of extraordinary depth, by the state highway department, the sum of \$201,963.46. Great fleets of trucks are now maintained for this purpose and for general maintenance work at other seasons. In the winter they are mobilized for the battle with the snow, along with rotary snow plows and even a power shovel. The fleets are directed by means of radio, not only with fixed stations but also with two-way sending and receiving equipment

(TURN TO PAGE, 54, PLEASE)

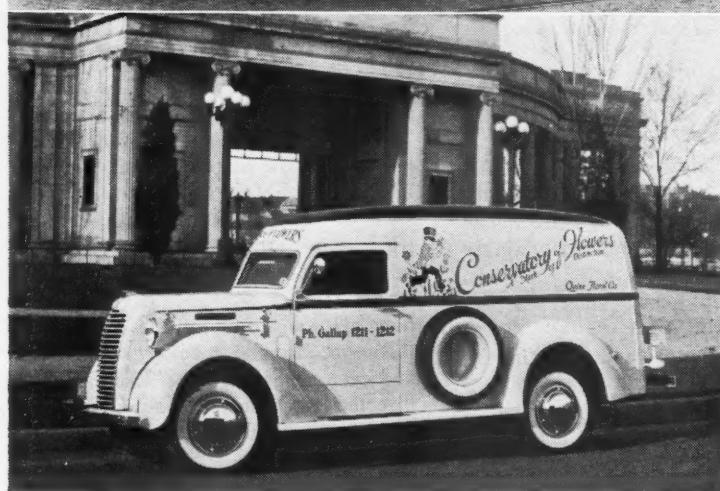
THE ALBUM OF MODERN MOTOR



1



2



3



4

1. Designed to radiate both the merits of Southwest Dairy Products and the Texas sun is this 76-case body by AMERICAN BODY & EQUIPMENT CO., Dallas. The embossed side panels are of stainless steel. Two inches of DRY-ZERO are under the Aluminum-painted roof and paint which SHERWIN-WILLIAMS says "covers the world," covers this job. Chassis by FORD

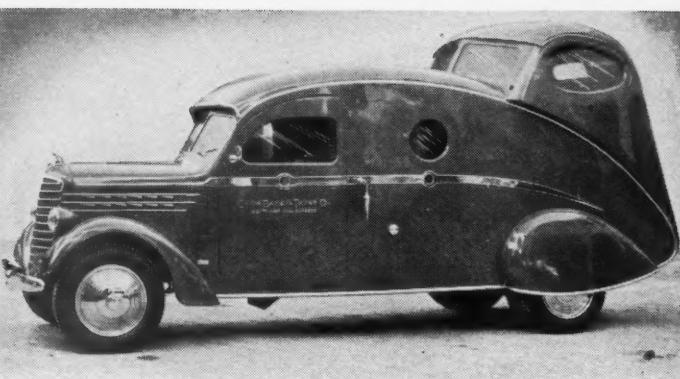
2. To transport the unromantic products of a Chicago foundry with all the glamour of a smart Fifth Avenue delivery car is the mission of this AUTOCAR, Model UD, fitted with 14-ft. streamlined body made by MAREMONT AUTOMOTIVE PRODUCTS, Chicago

3. "A Mark of Distinction" is the trademark of the Quinn Floral Co. and they say it with trucks as well as flowers. The DIAMOND T, Model 80, with special delivery body, is finished in spotless white and green

4. Thirsty Atlantic Citians don't have to wait for their beer to cool, for Caldwell's cab-over-engine STUDEBAKER, fitted with combination stake and mechanically - refrigerated body delivers pre-cooled refreshments direct to the customer's waiting fist

5. An INTERNATIONAL tractor, a TRAILMOBILE semi-trailer and a special ice cream body by SMITH COMMERCIAL BODY WORKS, Fargo, N. D., make up this modern unit of Red River Produce Co. Three KOLD-HOLD units and a YORK compressor supply the cold. HANSEN locks and hinges keep it in

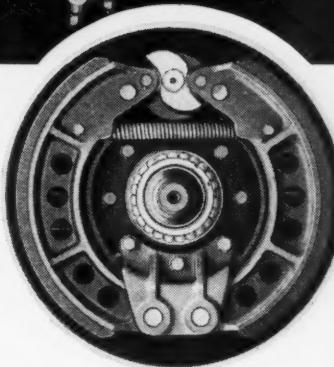
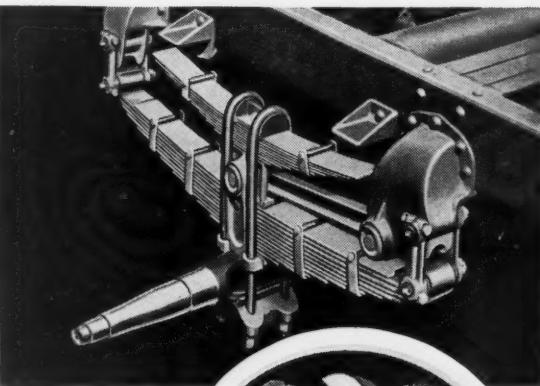
6. No mere streamlined caboose is this MACK fortress on wheels. Next to the "turret" top, its most unique feature is an outer shell of soft steel designed to prevent ricochets and slow the projectile before it hits the bullet-proof steel below. The air-tight body enables occupants to withstand a 1/2-hr. gas attack



5

6

TRUCK TRANSPORTATION EQUIPMENT



FRUEHAUF

Presents

New Chassis Features and a Light Trailer Body

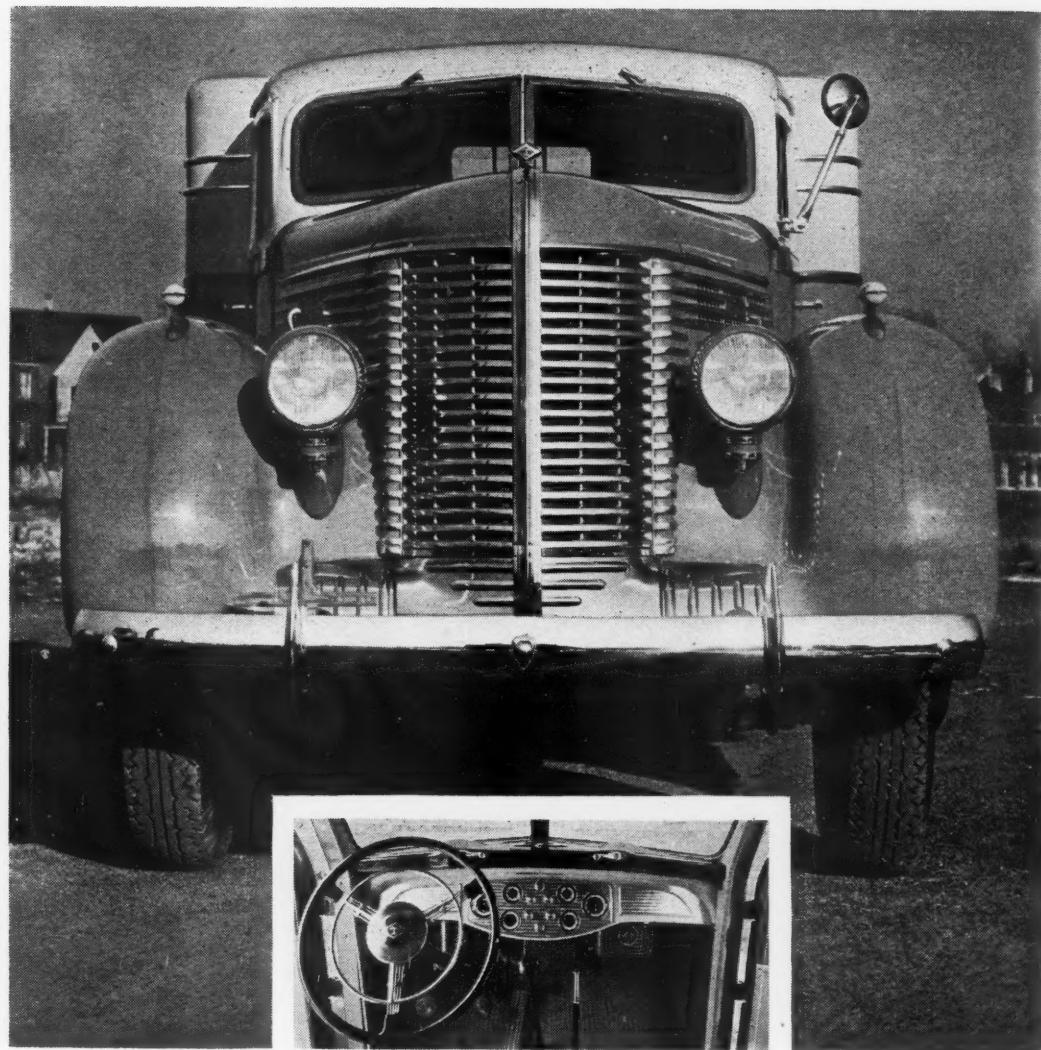
A NEW type of trailer body, known as the Fruehauf Merchandiser together with many improvements in the standard trailer line have been announced by the Fruehauf Trailer Co., Detroit. The new body is designed exclusively to meet a special haulage requirement:

that of carrying heavier loads than can safely be pulled behind an automobile, yet not heavy enough to require a large, freight carrying trailer. The new unit provides all the advantages of trailer efficiency and economy without penalty of either under-capacity or over-weight.

The new light-weight Merchandiser, top left, fills the gap between commercial and passenger car trailers. Improvements in spring suspension and brake design are shown above

The Merchandiser provides considerably more load space than has been found practicable in an automobile-powered trailer; and if a 1½-ton or 2-ton tractor-truck is used, the body may be built 8 ft. wide and 20 or more

(TURN TO PAGE 76, PLEASE)



DIAMOND-T

Presents

Super Deluxe Models With Stunning Front End Design

THE Diamond T Motor Co. has introduced a new line of "Super Deluxe" conventional models featuring a completely new front end sign. The new models are similar in all mechanical details to the corresponding standard models which are continued in their present form.

The radiator grille is rounded with horizontal bars flanked on each side by shoulders upon which matching

grille bars are carried back to the horizontal hood louvres. Vertical polished work strips are imposed upon the splash aprons at each side of the base of the grille.

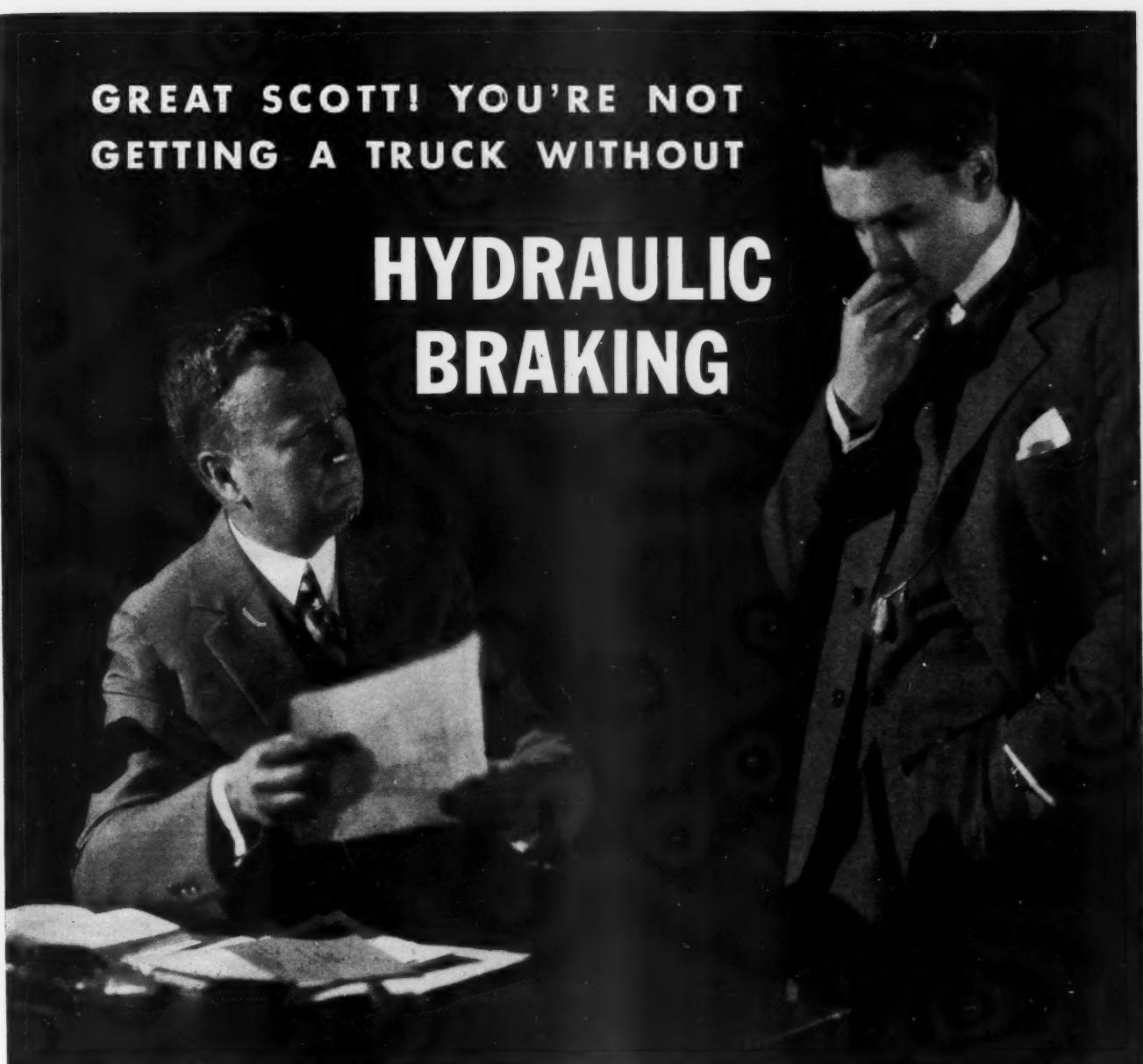
Chromium hub caps are in reality wheel caps as they cover all of the wheel except the rim and tire. Parking lights are standard on each front fender as well as a single bar chromium bumper with fender guards.

Vision from a well appointed cab is through a divided windshield in a chromium frame. Fenders are completely new in design and they add to the pleasing appearance.

Headlamps are mounted close to the radiator shell

**GREAT SCOTT! YOU'RE NOT
GETTING A TRUCK WITHOUT**

HYDRAULIC BRAKING



EVERYBODY doesn't want the same styling . . . or the same kind of engine . . . or the same type of body . . . in a truck.

But the vast majority of operators agree on stopping equipment. They want Hydraulic Braking. Year after year its friends increase.

And the reasons are plain. Hydraulic Brakes provide an easy, cushioned pedal—require very

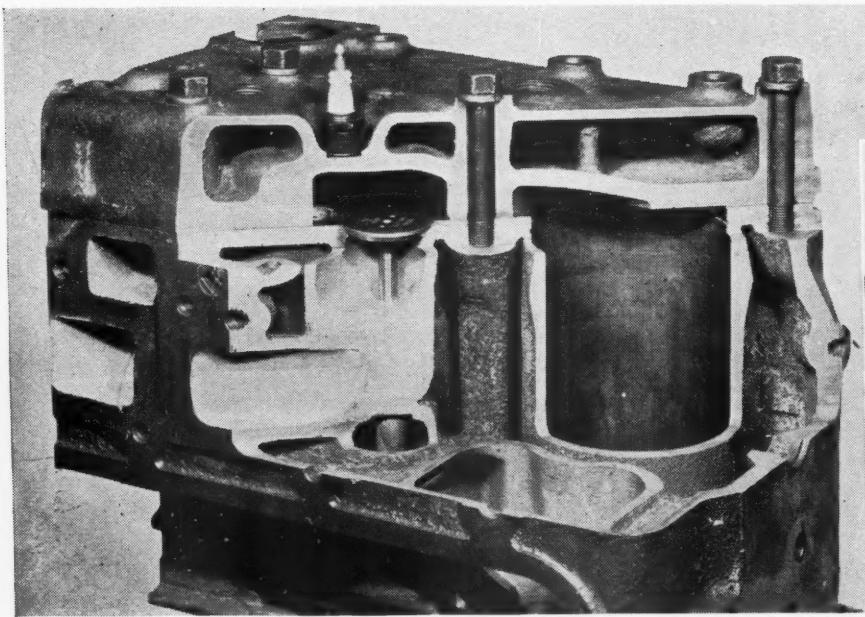
little attention—retain their adjustment—need no lubrication.

Truck operators know these things count heavily in the reduction of driving fatigue and in lowered maintenance costs. They know a truck with hydraulic brakes has a praiseworthy tendency to stay out of trouble.

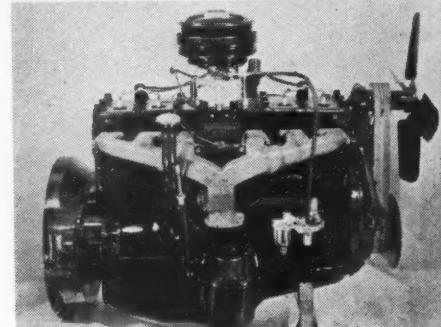
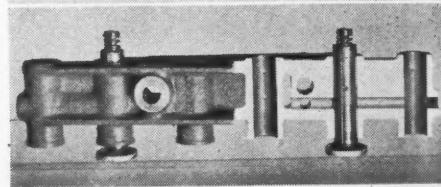
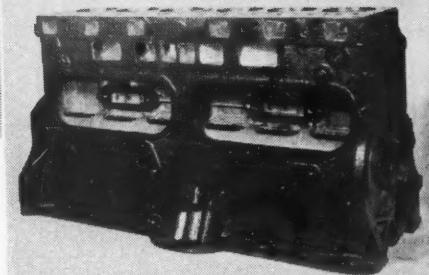
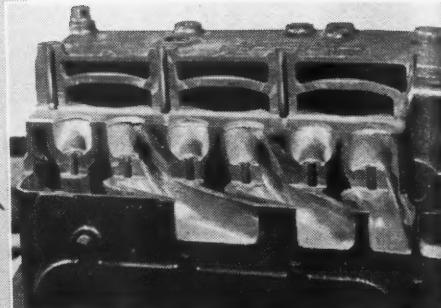
HYDRAULIC BRAKE COMPANY
Detroit, Michigan

LOCKHEED HYDRAULIC BRAKES

OFFICIALLY SERVICED THROUGHOUT THE NATION BY WAGNER ELECTRIC CORP.



Above: Cut-away section of White's new "362" engine showing cast column for hold-down bolt. Down the column, right, may be seen: water cooling passages around valves, "streamlined" valve intake ports, the hydraulic valve lifter bracket and oil passages, and side view of the complete engine which develops 280 lb. ft. torque at 1200 r.p.m.



WHITE

Presents

Model 750 Featuring a 362 Cu. In. Engine with Many New Features

THE White Motor Co., is building a new model rated in the 4½-8 ton field with a standard wheelbase of 136 in. with optional wheelbases up to 226 in. The new model 750 is powered by a new L head six cylinder engine of 362 cu. in. piston displacement with a bore and stroke of 3⅜ by 5⅛ in. The 116 h.p. engine develops 280 lb. ft. torque at 1200 r.p.m. The removable cylinder head is held down by bolts which are threaded into columns which extend down to the base of the engine for the

sole purpose of preventing cylinder distortion caused by hold down bolt stresses. The engine has a heat treated, counterweighted, 7-bearing steel crankshaft dynamically and statically balanced. A vibration dampener eliminates torsional vibration.

The manifolding is completely new. The intake manifold and intake ports have straight smooth passages graduated in size so that a uniform amount of fuel is delivered to each cylinder from the central vaporizing zone. The

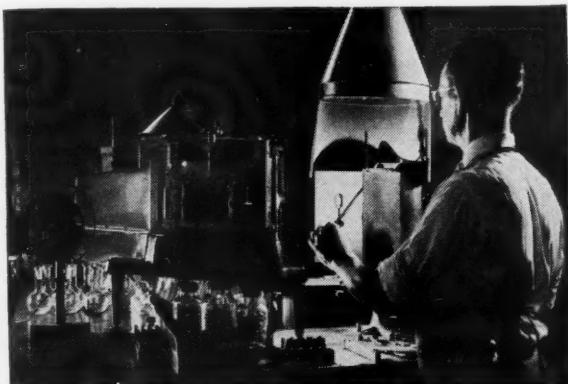
block design provides especially good cooling around valve seats and guides.

Valves are actuated by hydraulic zero-lash valve lifters which provide a permanent adjustment throughout the life of the engine and this in connection with the improved cooling reduces valve maintenance to a minimum.

Full pressure lubrication is insured to all main, connecting rod, cam shaft, piston pin bearings and timing gears through rifle-drilled passages. Squirt

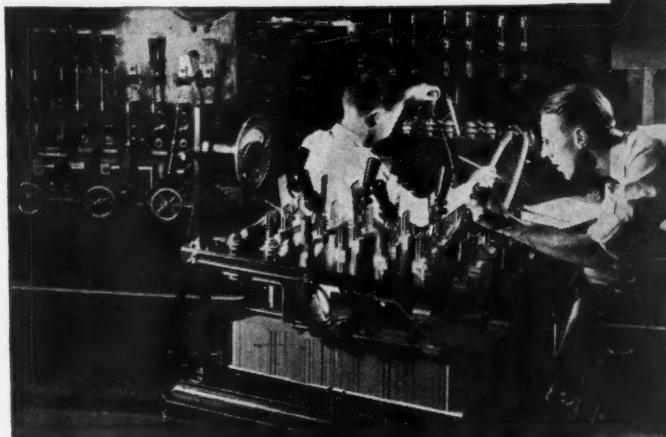
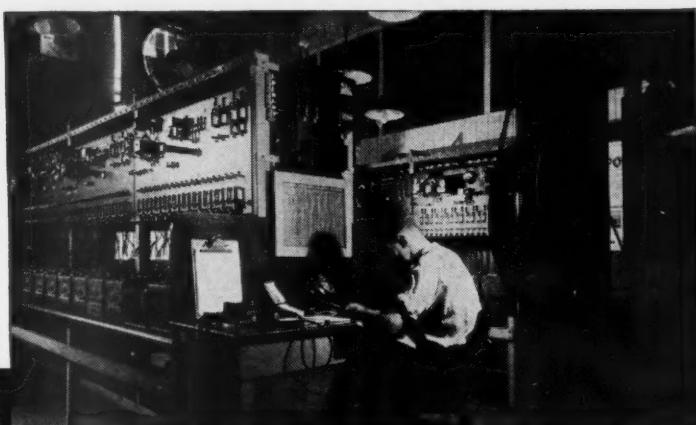
(TURN TO PAGE 66, PLEASE)

Exide outlaws guesswork in building batteries



To guard against the slightest impurity, the materials for Exide Batteries are tested by means of the spectroscope—the most efficient tool man has devised for identifying minute traces of such substances.

... these grueling tests produce a battery you can depend on in fleet service . . .

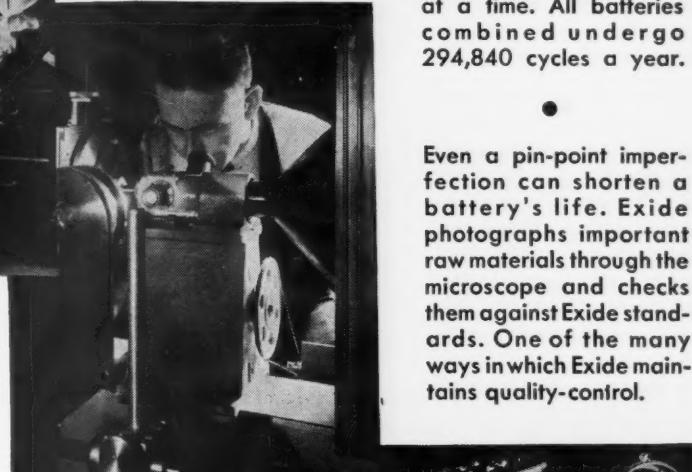


After chilling a battery to 0°F., Exide makes it deliver more than enough power to set a truck engine in motion at sub-zero temperature. The test determines how long the battery will keep on delivering power at this tremendous rate.

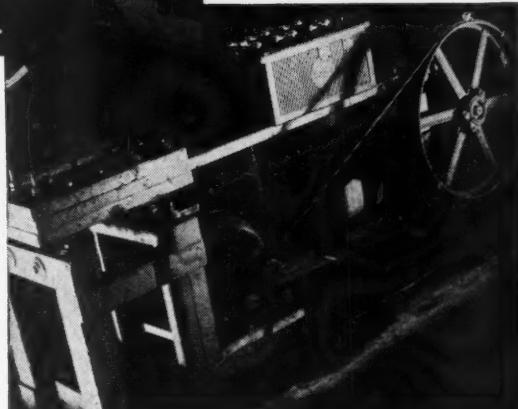
Exide's "life cycle" test compresses a year of the hardest service into a single month. Charge, discharge, then charge again . . . dozens of test batteries

at a time. All batteries combined undergo

294,840 cycles a year.



Even a pin-point imperfection can shorten a battery's life. Exide photographs important raw materials through the microscope and checks them against Exide standards. One of the many ways in which Exide maintains quality-control.



222 bumps per minute on a special "bumping machine," hour after hour for three days. Each battery tested receives 999,000 smashing blows—a combined force that would hurl a giant locomotive many feet in the air.

Exide

COMMERCIAL TYPE BATTERIES

With Mipor and Slotted Rubber
"MIPOR," Reg. U. S. Pat. Off.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

COMMERCIAL CAR JOURNAL
JANUARY, 1938

When writing to advertisers please mention Commercial Car Journal

FORD

Presents

For 1938 a Complete Line of Improved Trucks and Commercial Cars

FORD for 1938 has a line of trucks and commercial cars consisting of 24 units and 4 wheelbases. A one-ton truck with a wheelbase of 122 in. has been added to the line. The styling is new and bodies have been made more attractive. Hoods are now hinged at the cowl and lift from the front. Full skirted fenders have been added to complete the new styling design.

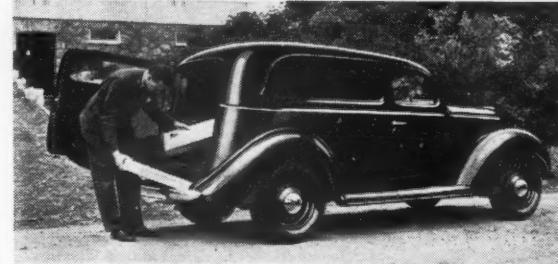
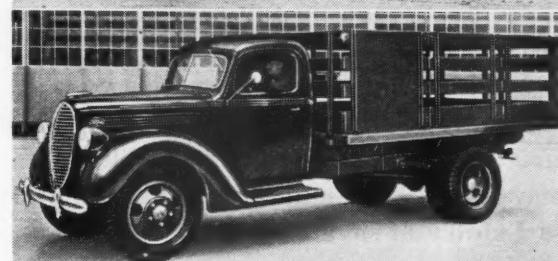
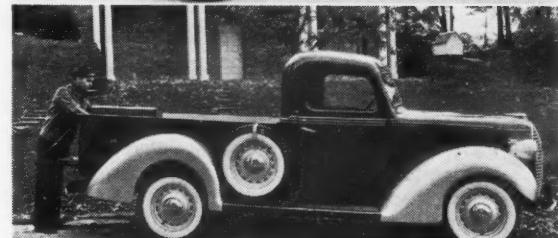
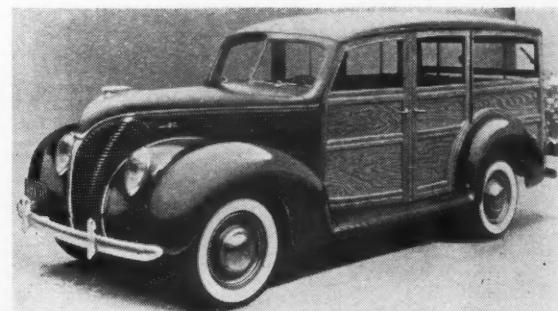
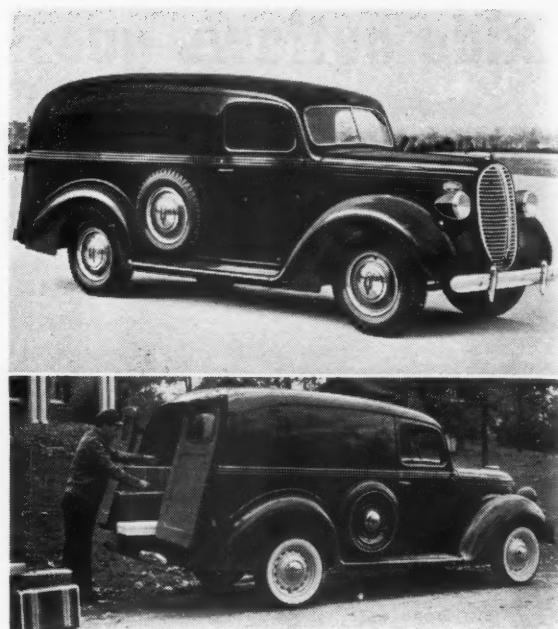
The new one-ton truck is available with either the 85 h.p. engine or the 60 h.p. engine. There are four bodies on this unit, platform, panel, express, and stake. Like the 1½-ton truck this model has a full floating axle, with straddle mounted pinion, full torque tube, transverse front springs and longitudinal rear springs, front and rear radius rods. Front brakes are 12 in. by 1¾ in. and rear brakes are 15⅛ in. by 2½ in. giving 277 sq. in. of brake lining. The hand brake lever which operates the brakes at all wheels is located under the instrument panel at the left side. Brakes are cable and conduit operated within cast brake drums reinforced with cooling ribs.

The standard transmission is a three-speed gear set with an option of a four-speed unit. Standard tires are 7.00/17-6 ply and 7.50/17-8 ply tires are an option at extra cost. Wheels are disk type.

In the 1½-ton line the former 131½ in. wheelbase models have been lengthened to 134 in. with resulting increase in CA dimension to 60 in. The frame width in all 1½-ton trucks has been increased to 34 in.

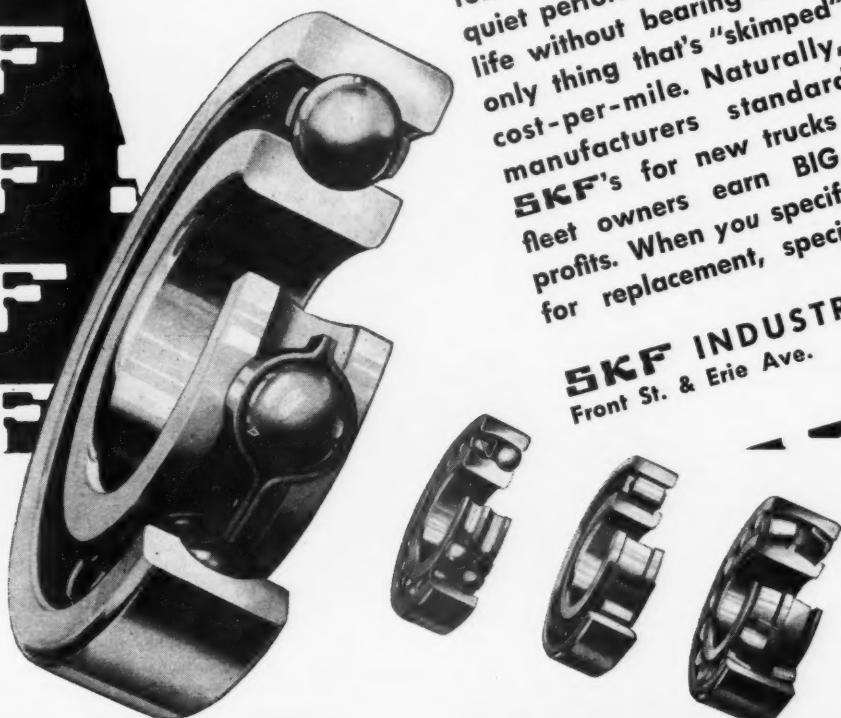
(TURN TO PAGE 88, PLEASE)

Top to bottom . . . The new 1-ton panel truck on the 122-in. chassis . . . The 112-in. panel delivery with new all-steel body . . . The station wagon features deluxe front end, glass windows and inside locks . . . The pick-up's body is lengthened to 77¾ in. . . . The 157-in. stack truck . . . and the sedan delivery which has a friction device to hold the door open



39

SKF makes more types and sizes of ball and roller bearings than any other manufacturer in the world.



There's no skimping with dependability when **SKF** Bearings are used on trucks. There's always a full measure of low maintenance, quiet performance, and long gear life without bearing trouble. The only thing that's "skimped" is the cost-per-mile. Naturally, many manufacturers standardize on **SKF**'s for new trucks . . . and fleet owners earn BIG mileage profits. When you specify bearings for replacement, specify **SKF**.

SKF INDUSTRIES, INC.
Front St. & Erie Ave.
Philadelphia, Pa.

3021

COMMERCIAL CAR JOURNAL
JANUARY, 1938

When writing to advertisers please mention Commercial Car Journal

EARS TO THE GROUND

Planetary Preference

The man who is probably this department's most skeptical operative was suddenly confronted with evidence that one truck manufacturer was definitely working towards a planetary transmission. He picked his chin up off his necktie in time to consult some other manufacturers and they told him it was not a bad idea at that.

Supercharger Science

One truck manufacturer will soon have more first-hand knowledge on superchargers in actual service. An operator wants more power and this manufacturer is going to give it to him in a carefully planned factory installation of a supercharger. The unit will be installed in tractor-semi-trailer service.

Insulation Inception

This department has always thought of insulation engineers as being an aloof crowd dealing in BTU's and thermometer readings but now we find that an insula-

FREE

More pieces of worthwhile literature, coming to our attention within the past month, are grouped under the heading of Literature on page 44. Check the numbers below which correspond to the numbers given the literature described, and we'll see that you are supplied. Mail to the Editor, Commercial Car Journal, Philadelphia, Pa.

33 34 35 36 37 38

Name
 Title
 Firm Name
 Address
 City
 No. Trucks No. Cars

tion manufacturer plans to spread out and supply body builders with body frame and outside panel of his own manufacture.

Refrigeration Ramification

"Hot" reports come to this department through what we consider routine channels concerning a new refrigeration unit which uses Dryice. Complete control of carbon dioxide gas is responsible for lower consumption of Dryice for longer periods of consistent cooling. Seven years' work has gone into the development, which places the original effort at about 1930.

Chain Check

The thought of one winter accessory apparently leads to another. A company best known for the excellence of its heaters is about to launch a program of manufacturing and selling a new dual tire chain.

Striping Statement

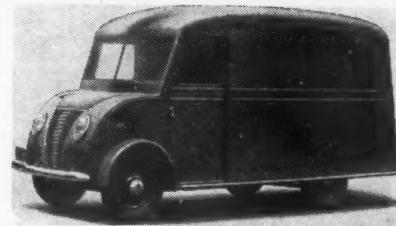
Feeling that the motor vehicle needs a gayer atmosphere a paint manufacturer contributes his bit by making striping easier. For the first time he will market striping paint in tubes but he does not stop there. There will be an attachment which fits the tubes, which makes it possible for anyone with a steady hand to cancel the monotony of a solid color surface.

Governor Gleaning

One governor manufacturer expects to be in production on a new passenger car governor before spring rolls around.

Valve Seat Valedictory

One truck engineer upon completion of experimental work on a new engine felt that with new valve cooling design and other improvements that it was in order to eliminate hard valve seat inserts. He was overruled by the sales department



Latest in conversation styling is exemplified by this latest development of Transportation Engineers, on a 1938 Ford truck chassis



6000 O'Keefe's 1-qt. bottles stow away inside this ultra-modern job recently delivered in Toronto. It uses a Mack Model EC tractor

which quite properly feared sales resistance. This department will accept bets if the stakes are low enough that he will eventually get his idea across.

Conversion Conversation

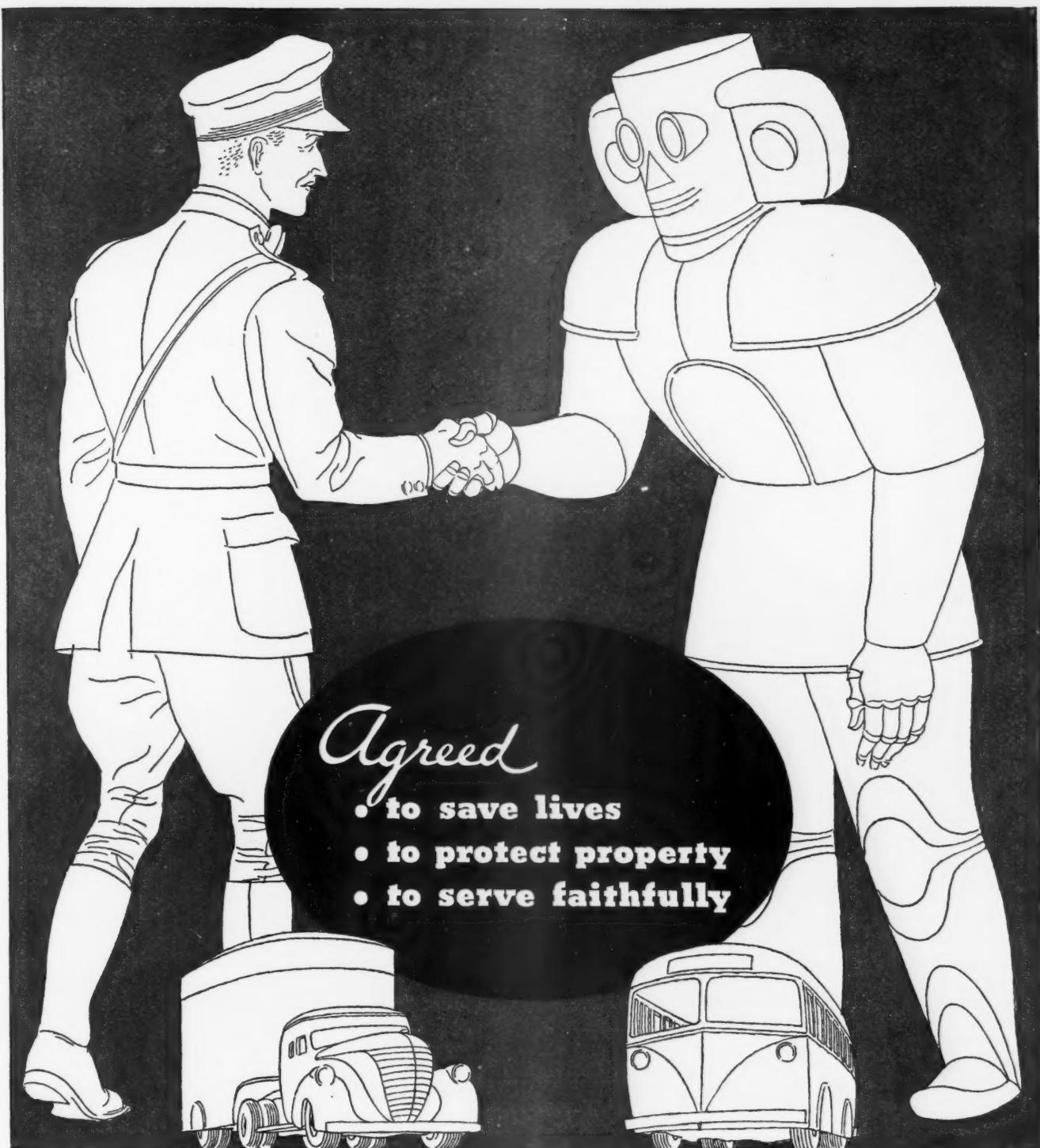
February is the date set for announcement of a new Ford and Chevrolet conversion which, among other things, involves the use of a heavy two-speed axle.

Hoist Hullabaloo

A midwest operative gets two demerits for reporting nothing more tangible than the fact that he knows a new hoist will be announced within 60 days. Eight more demerits before Christmas and he gets no turkey.



Unlike the old steel drums, modern oil cans, in cardboard cases need protection from the weather. Result—evolution in truck design



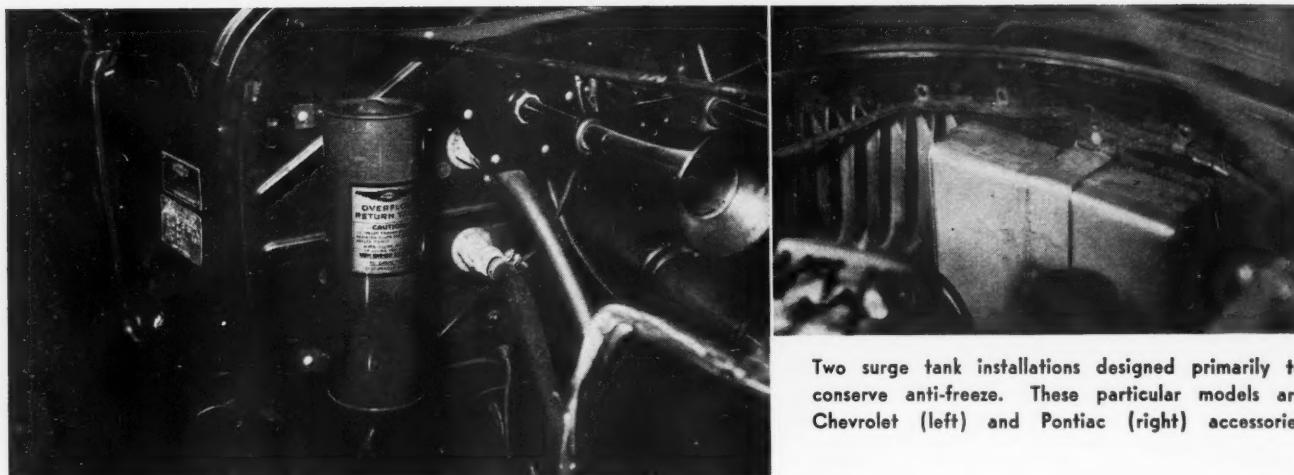
Modern operators of commercial vehicles, who take pride in their records of safety and service, find a staunch ally in the smooth, positive control of genuine Westinghouse Air Brakes . . . whose abundant power gives the operator a constantly adequate braking force to more than meet the stiffest requirements . . . whose finely graduated control insures smoother stops, less wear on brake lining, less chassis strain . . . and whose virtually effortless operation

never permits brake fatigue to rob him of alertness or efficiency. Naturally, the many advantages enjoyed by operators of air-equipped units are returned to the owners in lower maintenance costs, more rapid schedules and extra trips per day, in addition to the security assured by the world's finest control. The safety, dependability and efficiency of genuine Westinghouse Air Brakes are available for every commercial vehicle, as low as \$139.00 installed.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY • PITTSBURGH, PENNA.

Genuine

WESTINGHOUSE AIR BRAKES



Two surge tank installations designed primarily to conserve anti-freeze. These particular models are Chevrolet (left) and Pontiac (right) accessories

SURGE TANKS

Stop Anti - Freeze Loss by Trapping Over-flow and Feeding It Back to the System

SURGE tanks are being installed on many fleet trucks as a means of recovering any liquid or vapor that may escape from the cooling system. Some fleets make their own tanks while others buy them from one of several manufacturers who have them available.

The tank itself is usually mounted upon the engine side of the dash or some other convenient place. It is connected by a rubber hose to the radiator overflow pipe. In case of surging, the tank acts as an expansion tank, and in the case of vapor it acts as a condenser. When the engine has been permitted to cool off a partial vacuum is created in the cooling system and this draws such fluid as may have collected in the surge tank back into the cooling system proper.

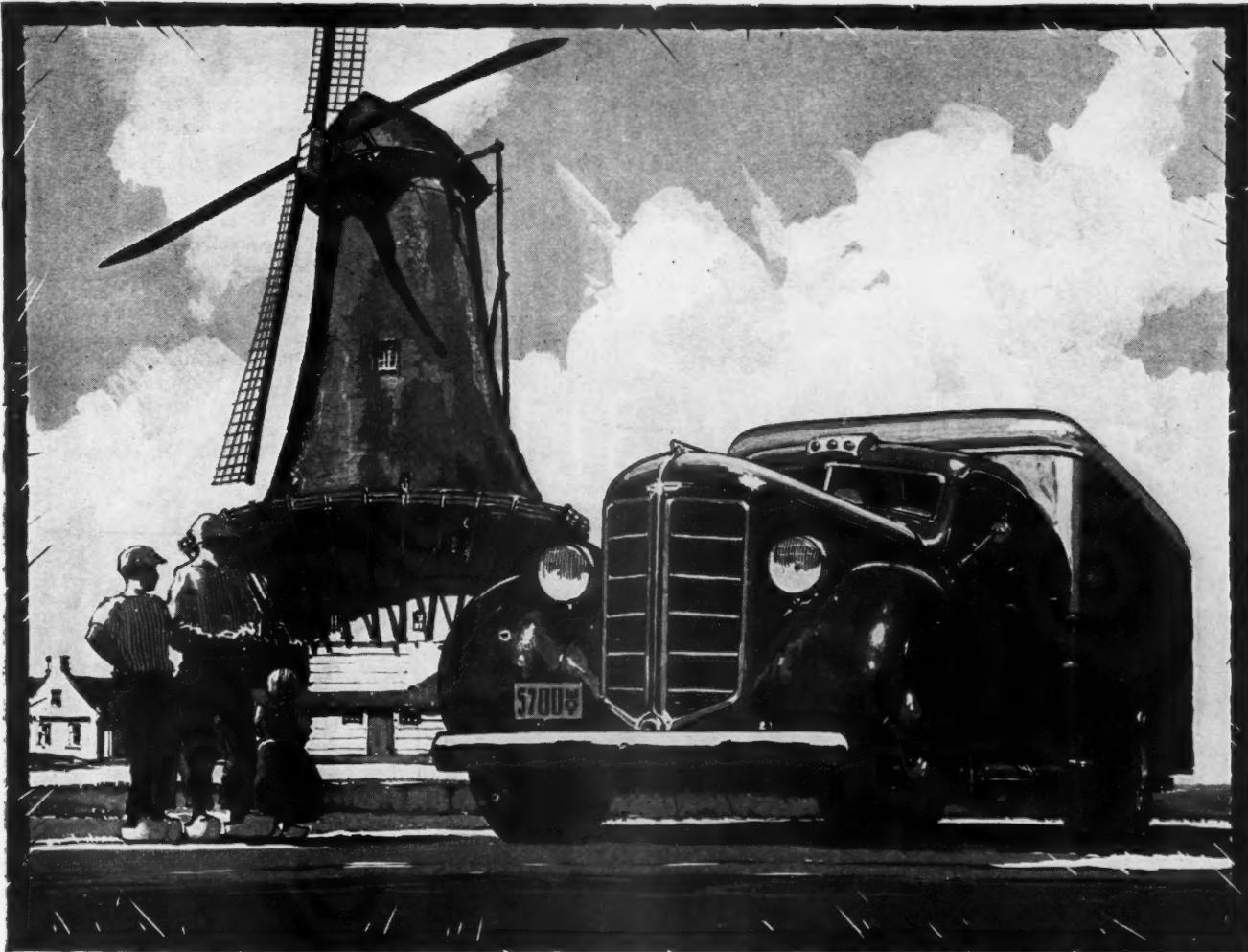
(TURN TO PAGE 64, PLEASE)

New Truck Registrations by Makes by Months

July, August, September and 9 months totals do not include Wisconsin

	Autocar	Brock-way	Chevrolet	Diamond T	Dodge	Federal	Ford	G.M.C.	International	Mack	Reo	Sterling	Stewart	Studebaker	White-Indiana	Miscellaneous	Total
January.....1937	130	102	14,362	863	3,764	207	16,544	2,820	6,244	389	354	29	92	169	592	948	47,809
January.....1936	75	94	15,124	495	6,207	223	14,606	428	4,743	90	339	8	85	143	493	607	43,760
February.....1937	112	115	7,939	602	5,043	208	16,480	3,051	5,256	364	317	26	101	222	550	1,451	41,815
February.....1936	57	88	14,978	510	5,556	170	12,228	758	4,365	107	217	4	62	134	408	661	40,301
March.....1937	179	140	17,164	849	6,498	241	20,838	4,201	5,820	480	495	23	149	478	655	2,080	60,291
March.....1936	88	127	19,511	634	6,751	205	16,168	1,551	5,395	184	264	17	73	221	477	762	52,428
April.....1937	228	184	22,707	916	4,090	258	22,897	4,815	6,894	594	394	47	121	725	819	2,193	67,882
April.....1936	121	179	23,323	784	8,817	271	18,493	2,733	7,308	289	379	21	112	327	700	1,099	64,956
May.....1937	198	183	20,772	867	6,045	301	20,452	4,536	7,279	588	424	28	120	720	795	2,549	65,857
May.....1936	109	168	21,443	754	8,507	275	17,971	3,045	6,704	440	399	16	116	358	719	1,159	62,183
June.....1937	199	139	17,177	685	6,191	226	17,760	4,146	6,925	540	454	33	94	651	678	2,728	58,826
June.....1936	96	137	19,045	660	7,777	287	16,930	2,820	6,151	427	325	28	113	320	599	1,136	56,851
July.....1937	281	152	17,011	719	6,333	219	18,262	4,088	7,348	607	445	34	104	587	654	2,607	59,451
July.....1936	137	207	20,769	786	7,885	268	18,012	3,363	6,928	483	366	22	131	350	729	1,029	61,435
August.....1937	171	134	18,806	627	6,665	158	15,859	4,394	7,446	421	317	14	87	541	508	2,533	56,681
August.....1936	139	163	20,356	759	8,071	242	16,954	2,977	6,115	426	313	39	124	314	621	915	57,528
September.....1937	183	94	16,252	623	6,346	128	15,791	3,496	6,460	406	249	31	75	350	502	2,130	53,116
September.....1936	122	138	15,177	795	7,788	240	16,613	3,112	6,514	418	515	15	139	317	634	741	53,278
October.....1937	194	129	10,511	474	5,042	163	10,103	3,165	6,367	432	275	20	79	261	657	1,561	39,433
October.....1936	159	155	7,752	959	7,389	255	11,363	2,736	6,529	506	516	36	133	343	803	680	40,314
Ten Months.....1937	1,875	1,372	162,701	7,225	56,017	2,107	174,967	38,712	66,039	4,821	3,724	285	1,022	4,704	6,410	20,780	552,761
Ten Months.....1936	1,103	1,456	177,478	7,136	74,718	2,436	158,336	23,523	60,752	3,370	3,633	206	1,068	2,827	6,183	8,789	533,034
% Change...10 Mos.	+70	-6	-9	+1	-25	-13	+10	+65	+9	+43	+3	+38	-6	+67	+3	+136	+4

HERCULES DIESEL ENGINES STIMULATE AMERICA'S EXPORT SALES



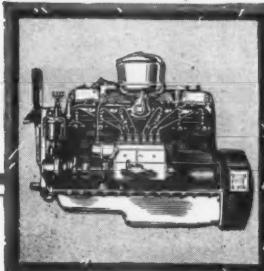
The use of Diesel power for trucks and buses in the United States has shown a marked increase since the introduction of high-speed Hercules Diesels. Even more pronounced, however, is the growing demand for Hercules Diesel power in foreign countries—where higher fuel costs place a premium on economical, efficient engine operation. Leading American manufacturers, including Autocar, Chrysler, Clydesdale, Diamond T, Federal, General Motors, Gramm, Hayes, Kenworth, Mack, Marmon-Herrington, More-

land, Reo, Stewart, Studebaker, Twin Coach, White and others, are shipping increasing numbers of Hercules Diesel-powered trucks and buses to foreign markets. Correspondingly prominent manufacturers of marine power plants and agricultural, industrial and oil field machinery have shown equal preference to Hercules Diesel power for both domestic and export equipment, while leading engine builders in several European countries have been licensed to manufacture and sell these well-known engines.

HERCULES MOTORS CORPORATION, CANTON, OHIO

America's Foremost Engine Manufacturer • Power Plants from 4 to 200 H. P.

HERCULES ENGINES



NEW PRODUCTS ON PARADE



Goodrich Diesel Battery

A complete line of specially constructed batteries for Diesel starting service is an-

nounced by The B. F. Goodrich Co., Akron, Ohio. In the line are four 6-volt types, two 8-volt types and ten 12-volt types.

Eight of the batteries are of conven-

tional construction and eight built with the Kathanode construction. Port Orford Cedar separators, the highest type wood known for this purpose, are used in the separators of the conventional type.

K-D Electric Flare

The K-D Lamp Co., Cincinnati, Ohio has an electric flare for vehicles where flares with open-burning flames are not permitted or for users who prefer an electric flare.

The flare is moisture, dust and fool-proof, with Fresnel type lens, emitting horizontal ribbons of light.

The lens holder fastens to flare against a cork gasket which forms a protection against vibration, handling, dust or moisture. Switch is such that shaking or vibration cannot cause flare to light unless turned on.

(TURN TO PAGE 46, PLEASE)



DON'T GAMBLE

on Fuel Line Replacements

WHEN 90 per cent of car makers using flexible fuel lines choose Weatherhead — isn't Weatherhead your logical choice for replacement?

Flexible — vibration and fuel-proof — Weatherhead lines can be counted on to keep your fleets on the road.



WEATHERHEAD
300 E. 131 ST. CLEVELAND, OHIO

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COMMERCIAL CAR JOURNAL
JANUARY, 1938

LITERATURE FREE

Note: Any of the following items may be obtained by filling in the coupon on page 40.

33. THE BINKS MFG. CO., Chicago, Ill., has announced the publication of a new complete catalog covering their whole line of paint spraying equipment. There are 60 pages of descriptive matter and illustrations.

34. THE CENTURY ELECTRIC CO., St. Louis, Mo., have released a 24-page illustrated booklet titled How To Select the Right Motor. The booklet gives information on how to select a fractional horsepower motor to do a given job.

35. GAR WOOD INDUSTRIES INC., Detroit, Mich., has released bulletins No. 2 and 3. The first describes and illustrates heavy duty cam and roller hoists. The second does the same job on heavy duty dump bodies.

36. CURTIS PNEUMATIC MACHINERY CO., St. Louis, Mo., has recently issued catalog C-83-A covering the company's complete line of air compressors, car washers and rotating lifts, including truck equipment.

37. MINNESOTA MINING & MFG. CO., St. Paul, Minn., has issued a 46-page catalog of its surface coated abrasives. The proper material for virtually every conceivable sanding operation, power or hand, together with masking tapes and polishing products are described.

38. HOMESTEAD VALVE MFG. CO., Coraopolis, Pa., has a small folder describing the use of the company's Hypersure Jenny steam vapor cleaning systems. Although directed primarily to dealer establishments, the folder contains useful information for the fleetman.

WEED American

BAR-REINFORCEMENTS

**... more than
DOUBLE
your
Chain Mileage**

• Yes, those double-welded Bar-Reinforcements not only prevent forward, back and side skids but they also provide twice the metal to wear through. Moreover, that metal is tough, wear-resisting "Weedalloy," especially developed for WEED Tire Chains. That means still *more* mileage.

Thus WEED American Bar-Reinforced Tire Chains give you greater safety—*more than double* mileage. That's why they are known as "The Best Buy in Tire Chains."

Standardize on WEED Americans and cut your chain costs.



**AMERICAN CHAIN & CABLE
COMPANY, Inc.**
BRIDGEPORT, CONNECTICUT

In Business for Your Safety

SEND FOR FREE CHART

25% to 50% can be added to chain mileage by proper installation. Send for free chart that shows how to apply chains so that all cross chains get equal wear.

WEED

**WEED American
Bar-Reinforced
TIRE CHAINS**

Licensed to manufacture and sell Bar-Reinforced Tire Chains under United States and Canadian Letters Patent: American Chain & Cable Company, Inc.; The McKay Company; The Hodell Chain Company; Pyrene Manufacturing Company; Dominion Chain Company, Limited; and Pyrene Manufacturing Company of Canada, Limited.

COMMERCIAL CAR JOURNAL
JANUARY, 1938

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NEW PRODUCTS

(CONTINUED FROM PAGE 44)

Ramco 10-UP Ring

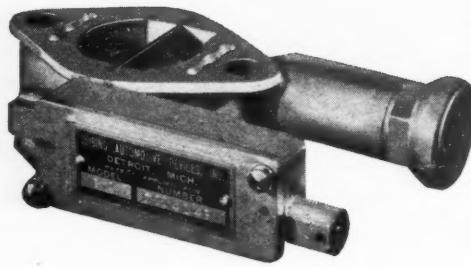
The Ramsey Accessories Mfg. Corp., St. Louis, Mo., is producing the new 10-UP oil control ring. This ring has steel segments which have 1/3 of the total ring bearing surface. During the wearing-in process only the cast iron portions receive pressure from the inner ring, the steel segments contacting the cylinder wall with only inherent tension. The companion compression ring has an upper section of cast iron and a lower section of steel.

Circo Solvent Vapor Cleaner

A new solvent vapor cleaner for cleaning differential and transmission gears has been announced by Circo Products Co., Cleveland, Ohio. Known as the Circo Dee-Tee solvent vapor cleaner, the device consists of a tank 8 in. in diameter and 11½ in. high, fitted with an electric heating unit and a flexible hose. In operation, the special solvent is poured into the tank, the hose coupling is screwed into the gear case filler hole, and the current turned on. Vapor is induced into the housing, condenses to liquid when it strikes the metal and runs off as a liquid carrying all lubricant and dirt through the drain plug hole. It also thaws.



LEIBING GOVERNORS



**UNIVERSALLY USED
AS STANDARD
EQUIPMENT
NOW AVAILABLE
FOR EXCHANGE
AND REPLACEMENT**

"Exchange" Governors are new and scale set to meet your engine speed requirements.

Each unit packed individually with necessary accessories and instructions for installation.

We Guarantee

**Satisfactory Performance
Snappy Acceleration
Top Fuel Economy
Long Life**

✓ Check with your local truck dealer for Leibing "Exchange" and Replacement Governors

For Further Information Write
LEIBING AUTOMOTIVE DEVICES, INC.
DETROIT, MICHIGAN

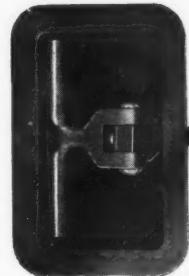
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New Goodrich Tire Cord

A new type of cotton tire cord, designed primarily to reduce heat generated at high speeds in truck tires, has been announced by The B. F. Goodrich Co., Akron, Ohio. The new cord, developed after months of research, gives unusual strength without bulk and materially reduces operating temperatures of tires, the makers declare.

New Eberhard Handle

A new folding door handle has been added to the line of body hardware manufactured by the Eberhard Mfg. Co., Cleveland. Adapted particularly for small side doors on tank bodies, the handle folds back into a recess when not in use, leaving no projection on the side of the truck. A concealed spring in the handle leaves it in folded position and prevents rattle. The handle shank is located and prevents rattle. The handle shank is located at the side of the recess so that lock can be fitted close to edge of door. The device is adapted for use on either wood or steel doors.



Distributor Tester

The Electric Heat Control Co., 9123 Ingman Ave., Cleveland, Ohio, announces a new tester, the D-1 Distributor Drive, which enables you to test distributors under actual driving conditions. The new Distributor Drive uses a standard coil and 6-volt battery. It operates on the stroboscopic principle and is designed for synchronizing and adjusting breaker points, checking spark advance, governor action, cam dwell, and will also show defective breaker points, bushings and bearings.

There is also a new engine tune-up bench which includes an exhaust gas analyzer. This unit will test exhaust gas, coils, relays, generators, fuel pumps, carburetors, voltage regulators, timing, cables, etc.

COMMERCIAL CAR JOURNAL
JANUARY, 1938



...that's why millions use it

DULUX IS THE BRILLIANT, ECONOMICAL FINISH

*...preferred by thousands of truck owners
for low-cost, long-time economy!*



"BLUE VALLEY BUTTER" is another famous product that uses DULUX to give customers a good impression of the company. At the same time that DULUX makes Blue Valley Creamery Company trucks brilliant traveling advertisements, it saves them money on upkeep and refinishing costs. For DULUX lasts longer . . . reduces the number of trips to the paint shop.

DULUX is the finest finish for commercial vehicles that money can buy. It has amazing durability, lasting beauty and economy. That's why so many fleet owners specify DULUX.

The protective film of DULUX is highly elastic, resistant to chipping and cracking. Gases, greases, and oils do not soften DULUX, and an easy washing restores its high lustre and beautiful gloss.

If you want your trucks to make a better appearance and still save money, ask a Du Pont representative for full information about DULUX. It can be applied by brush or spray, either in your own shop or in that of an Authorized DUCO-DULUX Refinisher. E. I. du Pont de Nemours & Co., Inc., Finishes Division, Refinish Sales, Wilmington, Delaware.



REG. U. S. PAT. OFF.

AUTOMOTIVE DULUX

REG. U. S. PAT. OFF.



NEWS SUMMARY

November Truck Output Tops October, But Sales Are Off

Truck production in the United States and Canada for November was estimated at 49,000 units, based on returns from 31

states. This was an increase of 54 per cent over the preceding month when 31,939 were produced and a decrease of 10 per cent over the November, 1936, figure of 54,628 units. For the first 11 months of 1937 the production estimate was placed at 341,000. Compared with 740,741 during the same period a year ago the increase was approximately 11 per cent.

New registrations in the U. S. for December, based on the same estimates, were 27,600 compared with 39,433 in October and 30,222 in November, 1936. New registrations for the first 11 months of 1937 were estimated at 580,000 units for a gain of about 2 per cent over the 569,439 in the same period of 1936.

Gray Succeeds Britton as Director, National Highway Users Conference

On Jan. 1, 1938, Chester H. Gray, formerly Washington representative of the American Farm Bureau Federation for 12 years, assumed the responsibilities of Director of the National Highway Users Conference. Major Roy F. Britton, director since inauguration of the Conference in 1932, has retired.

Mr. Gray has been associated with agriculture and organizations within agriculture during his entire life. At 17, he operated a farm of considerable size. He later organized one of the First County Farm Bureaus in the State of Missouri, and was president of the First State Farm Bureau Federation in Missouri.

Major Britton deserves the thanks of every one interested in the movement of protecting and advancing the interest of highway users, for the constructive results he accomplished through the Conference. He temporarily left his position as president of the Automobile Club of Missouri, and its affiliated insurance company, to organize the Conference work. He will resume his former activities.



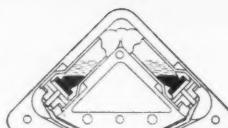
C. S. Fletcher, recently named sales manager of the Studebaker Corp. to succeed Louis K. Manley, resigned



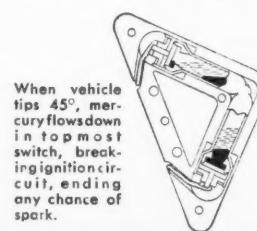
• Every time a truck rolls into the ditch—and that's all too often—gasoline spills out where a tiny spark can set off a roaring conflagration. The most effective way to prevent that spark is to cut off the ignition completely—before the gasoline gets loose.

This is accomplished automatically by the Durakool Tipover Switch. Costly fires are thus avoided.

The Durakool Tipover Switch is inexpensive to buy, easy to install. Fully approved by Underwriters' Laboratories, recommended by leading insurance companies. Equip your fleet immediately—before you have a fire. See your jobber.



Two mercury switches—of metal, not glass—are placed in series in the ignition circuit.



When vehicle tips 45°, mercury flows down in topmost switch, breaking ignition circuit, ending any chance of spark.



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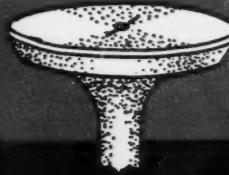
Lincoln Tunnel Opened to Traffic

Following formal dedication on Dec. 21, the new Lincoln Tunnel connecting Weehawkin, N. J., with West 36th St., New York, was opened to vehicular traffic on Dec. 22. Because the new tunnel is temporarily serving two-way traffic, slow moving vehicles will be prohibited.

(TURN TO PAGE 50, PLEASE)

**THIS BIG
STELLITE FACED VALVE**

**AND THIS LITTLE
CAST IRON VALVE**



**Both Require the Same Finish and Precision in Refacing
That's Why You Need the
VARIABLE SPEED
HALL REFACER
WET TYPE**

Wet Grinding assures precision with no heating or distortion. **Rheostat Control** adapts grinding speed to valve head size and metal for finest finish. **Micrometer Feed** permits removal of exactly the desired amount of metal from face or stem. **Built-In Light** and many other exclusive features.

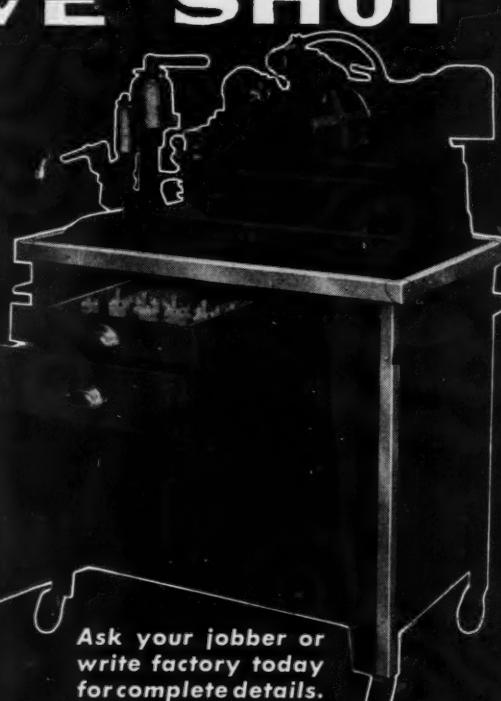


COMPLETE HALL VALVE SHOP

The **Hall Complete Valve Shop** enables any shop to render a complete reconditioning service on all types of valves and valve seats for all cars, trucks and tractors—and with production precision. Owners of this No. 661 Valve Shop tell us it is not only the most attractive piece of shop equipment on the market today, but that it quickly pays for itself in the extra valve jobs it sells.

The No. 661 Valve Shop pictured here includes heavy sheet steel cabinet beautifully finished in red and royal blue with chromium trim, No. 60 wet type variable speed Refacer and the **Hall Eccentric Valve Seat Grinder** complete with Grinding Wheels and Pilots for servicing all passenger cars. Or if desired, Cabinet, Refacer or Seat Grinder may be purchased separately.

THE HALL MANUFACTURING CO.
1610 Woodland Ave. Toledo, Ohio



Ask your jobber or write factory today for complete details.

HALL WET TYPE VARIABLE SPEED VALVE REFACER

NEWS

(CONTINUED FROM PAGE 48)

S.A.E. Annual Meeting

The annual meeting of the Society of Automotive Engineers will be held in Book-Cadillac Hotel, Detroit, Jan. 10 to 14.

Papers of particular interest to fleet men will include: "Economic Maintenance of a Concentrated Fleet of Large Trucks," by G. W. Laurie, Atlantic Refining Co.; "Economic Maintenance of a Concentrated Fleet of Mixed Vehicles," by B. S. Shaw, Pacific Gas & Electric Co.; and "Economic Maintenance of a Scattered Fleet," by

H. O. Mathews, Public Utility Engineering & Service Corp. "What Fleet Operators Should Know About Tires," by J. E. Hale, Firestone Tire & Rubber Co., and "The Outlook Toward Legal Performance Requirements," by Prof. J. T. Thompson, Johns Hopkins School of Engineering.

The annual dinner will be held Thursday evening, Jan. 13, at which time C. F. Kettering, general director, research laboratories, General Motors Corp., will present a paper entitled: "The Philosophy of Research."

Date of the S.A.E. summer meeting at The Greenbrier, White Sulphur Springs has been set for June 12 to 17.



Chester H. Gray (left) who succeeds Roy F. Britton (right) as director of the National Highway Users Conference. Story on page 48

Flogaus Joins Reo

Officials of the Reo Motor Car Co. have announced the appointment of Howard A. Flogaus as chief engineer. Mr. Flogaus until recently was with the Yellow Coach Mfg. Co.

The appointment of Mr. Flogaus is but the initial step in maturing further plans for Reo, according to Don E. Bates, president, who predicts striking advancements by the company, during the ensuing year.

Federal Expands Sales Organization

Complete reorganization and expansion of the sales structure of Federal Motor Truck Co. has been announced by R. W. Ruddon, vice-president and general manager.

The enlarged sales organization is headed by K. M. Schaefer, General Sales Manager.

New department heads are Ralph Nettleton, assistant general sales manager in charge of the Eastern territory; Walter Costello, assistant general sales manager in charge of the Western Territory; J. T. Ott, sales promotion manager, and O. E. Johnson, organization and analysis manager.

New regional managers are Frank Whitchurch, Michigan; R. H. Granger, Pennsylvania; William Mill, Metropolitan New York, and Bruce Klingler, New York state.

Studebaker Appoints Davis

Geo. D. Keller, vice-president in charge of sales for The Studebaker Corp. has announced the appointment of Paul R. Davis as regional manager in charge of the Atlanta branch. He succeeds M. S. Mentzer resigned.

Truckmen Play Santa Claus

According to the December, 1936, issue of the *Readers Digest*, the volume of second hand toys collected and redistributed to the poor each Christmas in Philadelphia has no equal in the country. Back of the transportation facilities for the undertaking is the Philadelphia chapter of the Pennsylvania Motor Truck Association which this year enlisted the services of 42 fleet owners in and about the city to carry on the good work.

Chevrolet To Feature Truck Week

The 9600 Chevrolet dealers throughout the country will observe a national truck week beginning Jan. 10. Truck displays will be featured in show rooms, supported by an extensive advertising campaign.

(TURN TO PAGE 52, PLEASE)

STRENGTH

**to withstand
SEVERE
LOADS
and SUDDEN SHOCKS**

MODELS 5A43 and 5A430—
A quality unit for heavy duty trucks and tractors.
Five speeds forward and two reverse. Option of overdrive or direct on fifth.
Three quiet driving speeds.



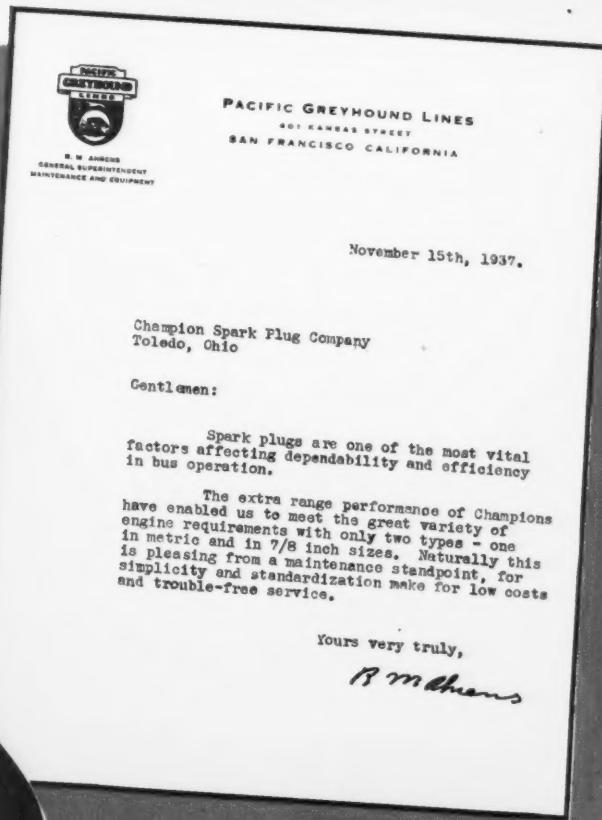
The gears that harness a hundred horsepower to the wheels of a truck must have worlds of stamina . . . must have wearing qualities to withstand the terrific stresses of constant hard daily service. • A quarter century of transmission building experience has given FULLER an accurate measure of the service requirements essential in heavy duty truck transmissions. Thus the acknowledged durability of FULLER Transmissions is a vital factor in hauling larger pay-loads, on faster schedules, with less time out for repairs.

FULLER MFG. CO. • KALAMAZOO, MICHIGAN

**FULLER TRANSMISSIONS FOR
TRUCKS and BUSES**

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JANUARY, 1938



YOU CAN DEPEND ON CHAMPIONS FOR LOWEST MAINTENANCE COST

Champion Spark Plugs have long been the choice of the outstanding fleet operators of the nation because they meet every haulage problem, every type of service, and every operating condition.

Like Pacific Greyhound, one of the three Champion users to win Bus Transportation's Maintenance Awards in 1937, many other fleet operators have found that the design and exclusive properties of Champion's Sillimanite insulator provide maximum heat range which prevents fouling or pre-ignition. They

have found that Sillment, the compressed dry powder seal between insulator and center electrode, makes all Champions permanently gas-tight and keeps them permanently in their designated heat range.

These exclusive Champion features, and the broad range of services which Champions will cover with the minimum number of types, assure fleet operators of lowest maintenance costs and the maximum in dependable service. Insist on Champions for lowest maintenance cost and dependability.

NEWS

(CONTINUED FROM PAGE 50)

Grey-Rock Contest

One of the largest "inside" contests ever attempted will be launched next month by the United States Asbestos division of Raybestos-Manhattan, Inc., Manheim, Pa. Awards totaling \$5,000, including a \$1,000 first prize, will be awarded for the best 50 words on "Why Grey-Rock is the fastest growing line." The contest will not be open to the public but confined to managers, foremen and mechanics of service stations and fleet shops.

Road Show, Jan. 17 to 21

The annual road show of the American Road Builder's Association will be held in Cleveland, Jan. 17 to 21.

K-D Holds Annual Convention

The K-D Lamp Co., Cincinnati, O., held its annual sales convention Nov. 30 and Dec. 1. H. R. Kerans, president, introduced a number of new items which will soon be placed on the market.

Next ATA Convention in Detroit

The executive committee of the American Trucking Associations, Inc. has named Detroit as its 1938 convention city, but has not yet set the date.



Willard F. Rockwell, president, and Walter F. Rockwell, vice-president, Timken-Detroit Axle Co., snapped on the Bremen as they returned from a trip to principal European centers

Hercules Opens Branch in Oil Fields

As the initial step in a program of sales and service expansion in the mid-continent oil field, Hercules Motors Corp., Canton, Ohio, has announced the opening of its first branch store at Kilgore, Texas.

C. W. Rauch Is Advertising Manager

Chas. W. Rauch has recently been appointed advertising manager of Marlin-Rockwell Corp., Jamestown, N. Y., succeeding Mr. A. A. McGowen who died on Oct. 28. Mr. Rauch for the past ten years has been manager of the Technical Publications department.

Willys-Overland Dividend

Directors of Willys-Overland Motors, Inc., Toledo, Ohio, have declared a quarterly dividend of \$48,116.70 payable Jan. 1 to holders of 320,778 shares of outstanding \$10 par value convertible preferred stock.

Minnesota Assoc. Names Horrocks

The appointment of Tom A. Horrocks as executive secretary of the Minnesota Truck Owners' Association, Minneapolis, has been announced by J. R. Cochran, chairman of the board.

Horses Are Livestock, Says Petition

United Tariff Bureau and Baker Horse Transportation, Inc., New York, have petitioned the I.C.C. that the term "livestock" as employed in the Motor Carrier Act be limited so as not to include the exemption of "horses." Petitioners claim numerous carriers have undertaken transportation of horses without the requisite special equipment, which permits them to underbid.

Lincoln Electric Opens Atlanta Office

The Lincoln Electric Co., Cleveland, Ohio, announces the opening of a welding sales-engineering office at Atlanta, Georgia, under the management of Robert Daniels.

Lower List for Kingham

A 10 per cent reduction in all trailer and trailer body prices effective at once has been announced by the Kingham Trailer Co., Louisville, Ky.

Rutter Leaves Larsen Co.

Edward S. Rutter of Jamaica, L. I., N. Y., prominent bakery accountant has severed his connection as controller of the Larsen Baking Co., Brooklyn, N. Y.

$$4 \times 2 = 8$$

*Transmission
Speeds*

*Axle
Ratios*

*Forward
Speeds*

To obtain the many advantages of dual performance buy your trucks equipped with the Eaton 2-Speed Axle.

The HIGH Ratio

—gives you Overdrive Performance, enabling the truck to maintain any given road speed at greatly reduced engine R. P. M. Truck travels faster and farther than normally on a specified number of engine revolutions. Savings are made in gas, oil, and engine wear. Loads move at more profitable speeds. More and faster trips are made over smooth highways. Time and money are saved on every trip. Earnings are substantially increased.

The LOW Ratio

—gives you Underdrive Performance which provides extra pulling ability. Better time is made over many grades. Normal speeds are maintained without shifting to lower transmission gears. Time is saved in hilly country, over rough roads and through heavy traffic. Starts the heaviest loads more smoothly. Pulls out of mud, sand, loose gravel, and deep pits without "bucking" or "frogging."

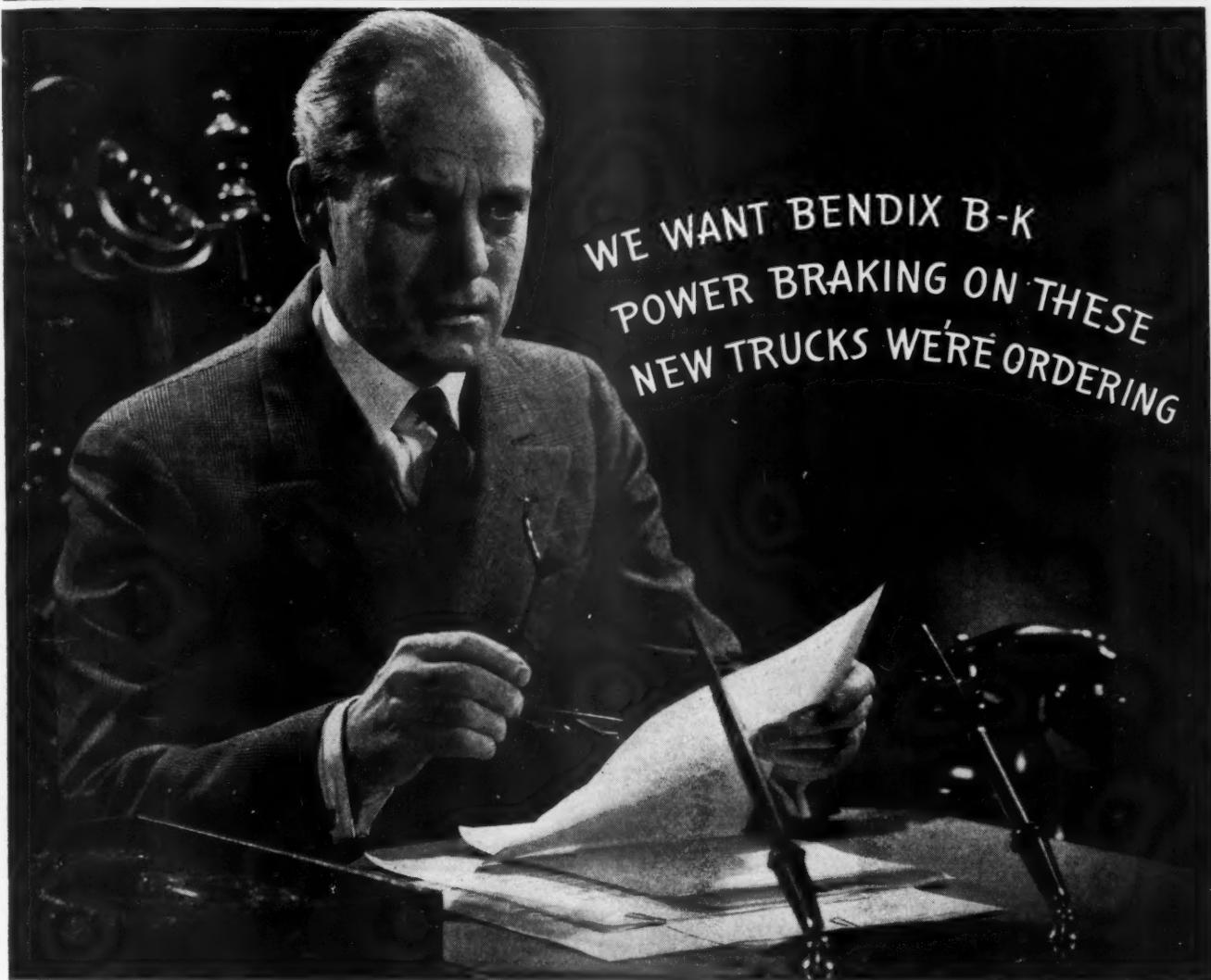
EATON MANUFACTURING CO.
CLEVELAND, OHIO

EATON
2 Ruckstell
SPEED AXLE
with New Eaton Forced Flow Axle Lubrication

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
JANUARY, 1938

PICTURE OF A MAN REMEMBERING—



EVEN though most leading makes of trucks come through with Bendix BK Power Braking... even though it can be installed quickly on any truck... many a truck order, minus Power Braking, slips by The-Man-With-the-Fountain-Pen.

Don't buy a truck without power braking. It's not safe, nor smart—in fact it's mighty short-sighted and we can prove it! And don't buy second-rate power braking. A slight saving in original cost may result

in a serious operating or cargo loss.

Only Bendix can give you the priceless plus of correct engineering and precision manufacture, backed by 15 years of experience in the application of vacuum power to braking. Specify Bendix BK and you've got the world's finest, the world's foremost, the world's favorite Power Braking. Specify something else and you've got less.

BENDIX PRODUCTS CORPORATION
(Subsidiary of Bendix Aviation Corporation)
401 Bendix Drive, South Bend, Indiana

BENDIX

Controlled Vacuum
POWER BRAKING



COMMERCIAL CAR JOURNAL
JANUARY, 1938

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BETTER because of...

- ★ More Than Meeting All State Laws
- ★ Least Weight Added
- ★ Fewest Added Parts
- ★ Low First Cost
- ★ Practically No Maintenance
- ★ Instant Remote Control
- ★ All Emergency Features of Train Operation
- ★ Quick, Easy Installation
- ★ Original Brake System Being Left Intact
- ★ Fully Controlled Power Application
- ★ A Nation-Wide Exchange Service Plan
- ★ A Nation-Wide Service Organization
- ★ Years of Power Braking Experience and Unapproached Protection Over Future Years of Satisfying Service

Fighting Snow

(CONTINUED FROM PAGE 31)

on much of the mobile equipment. And it is a battle, with the maintenance engineer, J. D. McVicar acting as the commander of the forces. Over him is his commander-in-chief, Lacey V. Murrow, director of highways. Under him, in the maintenance department, are six district maintenance engineers, five supervisors in each district and a normal force of 2500 men.

"Mr. McVicar, what does it take in the way of mobile equipment to carry

on this battle with the snow?" In answer, he jotted down on a piece of paper the following figures:

1½ to 7½ ton trucks.....	240
Rotary snow plows.....	14
Tractor with displacement plow.....	1
Gasoline power shovel.....	1
	256

"You will understand," he added, "that the trucks are also used in the regular, all-year-around maintenance work, but they are practically all available for snow removal when the occasion demands."

"In combatting snow successfully, it is necessary to mobilize in an area al-

most with the appearance of the first flakes. Light, fast trucks, equipped with moldboard plows start on the lower levels when the snow is two inches in depth, traveling at 25 to 35 m.p.h. If the storm is long and the shoulders fill up, the snow must be pushed back. Heavier trucks follow then, with V-plows and wings and push the snow still farther back. For still further accumulations, the rotaries are brought into play, which, fitted with break-down attachments, are capable of handling depths up to 20 ft.

These breakdown attachments, also called rotors or diggers, resemble nothing so much as a small propeller or fan, mounted on a boom above the rotating blades of the plow. They dig into the bank above the blades and literally "paw" the snow down onto the latter, to be hurled away over the side of the bank.

IN the mountain passes, the story is different from that in the low country. Two of these passes, Snoqualmie and Satus, are kept open all winter. The others are worked up as far as possible without endangering men and equipment, and then left for Nature to take her course in the Spring. In Chinook Pass, an attempt is made to keep some kind of a bore through if possible, to permit earlier opening, although it is not regularly open for traffic in winter.

Snoqualmie Pass, east from Seattle and the most important highway connecting that city with the cities of central and eastern Washington, carries its regular winter blanket of 14 ft. on the level, with spots piled up to 50 ft. The temperature sometimes reaches 30 below zero. The length of the pass is 40 miles. Here is a job to try men and equipment, and a permanent camp is required.

The regular equipment required at this point includes: three rotary snow plows on trucks, powered by 125 H.P. motors to drive the augers and rotars; five 3½-ton push plow trucks; one smaller truck for sanding; foreman's car; mechanic's car; gasoline shovel, its ½ yd. dipper replaced by a 4-yd. one of special wide-bottom design, with extra long boom and dipper stick. The last mentioned is needed particularly where slides have occurred. The compacted snow, ice and debris then present a real job of excavation.

When snow begins to fall in the passes, the plows are sent out immediately, traveling the grades at 10 to 25 m.p.h. When sufficient snow has been accumulated at the sides to make the rotaries effective, they start right in traveling with the traffic, spewing the snow over the bank and down the moun-

(TURN TO PAGE 56, PLEASE)



SPEED AND STRENGTH WITH SAFETY AND ECONOMY

EIGHT WHEEL Traction. TEN WHEEL Safety. Maximum economy on tires... fuel... brakes... general wear and tear... and saving of time make WARFORD MULTI-WHEELERS your best bet no matter how you look at it.

Saving money with every mile; hauling heavy loads at light costs WARFORD MULTI-WHEELERS continue to solve difficult transportation problems.

Ask your Ford Dealer or nearest Warford Distributor to show you how much you can save on operating costs... how much you can save on driving time, with quick-to-start... quick-to-stop WARFORD MULTI-WHEELERS.

THE WARFORD CORPORATION
44 WHITEHALL STREET, NEW YORK, N. Y.

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COMMERCIAL CAR JOURNAL
JANUARY, 1938

"WHY SHOULD WE PAY THE LONG PRICE FOR A HEAVY-DUTY JOB?"

HERE'S A 3-TON CHASSIS

THORNTON-eered TO HANDLE 15 TONS!
(GROSS VEHICLE WEIGHT)

THORNTON STANDARD UNIT
recommended for loads up to 26,000 pounds, gross vehicle weight (as a truck).

THORNTON "BIG BOGIE" UNIT
recommended for loads up to 30,000 pounds, gross vehicle weight (as a truck).

**CHOOSE YOUR
1½- to 3-TON
CHASSIS..have it**

EVERY DAY, in dozens of industries, shrewd operators are finding the answer to their truck problems in the dependable, year-round, heavy-duty performance and economy of lighter trucks with Thornton Four-Rear-Wheel Drive engineered into the original chassis.

Thornton engineering permits extra carrying capacity, of course—but of greater importance, it provides *double the power to pull it where there isn't a road—and plenty of speed* on the highway.

Thornton Four-Rear-Wheel Drive is considerably more than a

third axle, more than a dual-ratio transmission, more than a piece of equipment attached to a truck chassis. It is a thoroughly engineered installation which affords the operator distinct performance advantages over large, heavy-duty, single-driving-axle trucks of equal rated capacity—with substantial savings in initial cost and expense of operation and maintenance.

Before buying that big, expensive truck, see proof of the extraordinary results delivered at low cost by the 1½-to-3-ton truck—Thornton-eered.

THORNTON TANDEM COMPANY
5131 Braden Street **DETROIT, MICHIGAN**

Distributors in every large industrial center
SEE THE THORNTON DISPLAY AT THE ROAD SHOW—SPACE B-19

THORNTON-eered

(CONTINUED FROM PAGE 54)
tain. This operation is continuous during a storm, sometimes 36 hours at a stretch.

Mountain sections, subject to extraordinary depths of snow, are dangerous to work. It is possible to lose equipment down the mountainside if extreme precautions are not observed. The men are real heroes, moving the heavy equipment over bottoms that are hidden and in the face of slides, usually to the accompaniment of sleety snow and whistling wind. The public driving through the long, glistening, marble aisles, which are the result of their efforts, do

not realize the hazard that lies in this everyday work.

WHAT are the factors sought most of all in the selection of snow-handling equipment?" Mr. McVicar was asked. He replied that two were outstanding.

"First, we look for simplicity of design, which means simplicity of maintenance in the field. Gadgets and improved "features" that add to complication in equipment are not looked upon with favor out in a snowdrift 75 miles from nowhere, if they go wrong.

"The next thing is all-year-around serviceability of the power units. We

do not want any 'fair-weather friends' among the motors. The equipment must be able to take it not only in the summer, in the regular maintenance work, but adapt itself equally well to the storm and cold conditions that have been described."

In the central office of the highway department in Olympia, there is a large map of the state of Washington on which are spotted the eight district offices of the department. Radiating out from Olympia are heavy lines to the other district offices, covering a large portion of the state like a great fan. Bear in mind that this is one of the big states, geographically, and over 300 miles north and south or east and west. Now locate an army of 2500 men, with 256 pieces of heavy mobile equipment operating out from 17 field offices, including the eight district offices. Winter comes on. The passes begin to fill up automatically. Local snow storms come up in all parts of the great area, or at times are quite general over a large part of it. What have you got?

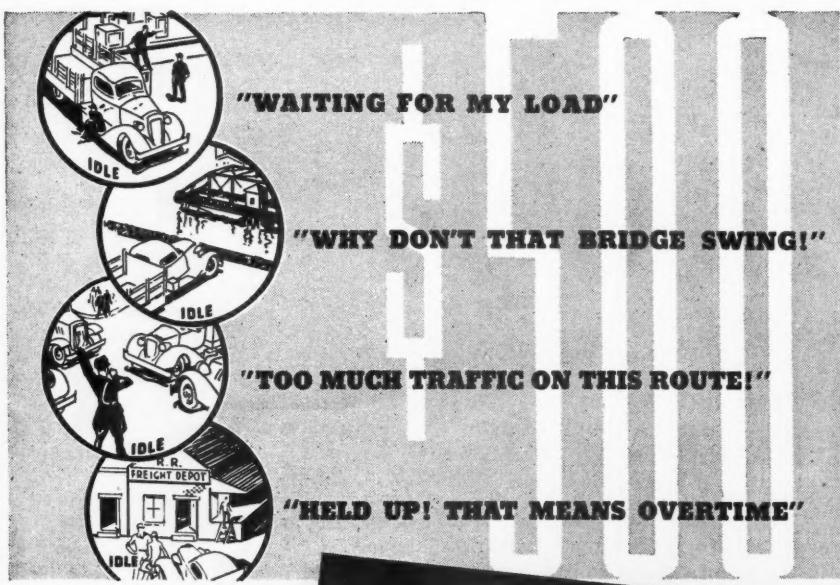
IT is a problem of twofold character. One phase of it is to rapidly shift men and equipment from one storm ridden area to another to keep as many of the roads open as much of the time as possible with the means available. The other phase is to hold back traffic from or re-route it around sections of highway that are not as yet opened after any particular storm. It is in handling this problem that radio has been made very effective. Before the state highway department equipped itself with radio facilities, dating back to 1934, a commercial trucking operator in Yakima, for instance would ask, after a storm: "Can I make it to Seattle through Snoqualmie?"

"Don't know when," the answer would be. "Wires are all down. You might try it." Perhaps he did try it, only to find, after a hundred mile journey, that the pass was not open and would not be for 48 hours. Back he would have to go, at the expense of time and fuel, or else lay over.

Or a man in Spokane would ask if he could make it. "Don't know. Might if you had chains." Buys an expensive set, which he may never use again, comes to the pass and finds that he does not need them at all. Or, he takes a chance and does not buy any and later finds himself up in the mountains lined up with a score of other chainless unfortunates and the nearest supply store 25 miles away.

Such instances, multiplied many times over, spell loss to the public. Radio has now changed all that and anyone can easily ascertain the exact

(TURN TO PAGE 58, PLEASE)



How? In more ways than you might suspect

● Believe it or not, a big Chicago concern discovered their trucks were waiting for their loads on an average of two hours per day! Yet the loading platform was right there under their eyes! What made them see it? The Servis Recorder with its chart.

Shows Up ALL Delays

What about routes that don't fit, traffic zones that could be avoided at rush hours, delays sometimes caused by the customer himself, other delays that may trace back right to your own office!



The Servis Recorder

Tells Every Move Your Truck Makes

For "delays that you never realized" do like thousands of other fleet owners are doing—put on

Servis Recorders. Send for free booklet—
"Ten Ways of Getting More Work Out of Motor Trucks."

THE SERVICE RECORDER CO.
1422 Euclid Ave., Cleveland, O.
Branches in Principal Cities

102 MEAT PACKERS CUT COSTS TO THE BONE WITH SOVAC

**OUR SHOP
FOREMAN
TELLS ME
SOVAC SAVES
HIM WORK!**



**Sovac Users Report Better Mileage on Both Oil and
Gasoline...Less Wear and Fewer Motor Overhauls
...Rings and Valves that Stay Clean, Free of Gum!**

YOU OUGHT TO SEE the "fan letters" Sovac gets! By the dozen! By the hundreds!

They come from hard-headed business men in charge of operating and maintenance. Men who think in terms of dollars...expense per truck-mile ...*"How much does it cost me?"*

Sovac helped each one of these men lick a different problem. But they *all* agree on one thing: **Sovac saves them money!**

Why not make us prove this statement?

Let us send a Socony-Vacuum Fleet Engineer to call on you. He's an experienced lubrication *expert*...with a thorough-going knowledge of truck operation and maintenance.

Let him run a controlled test on your own trucks, in regular service. He'll give you proof that Sovac will bring down your operating expenses...keep your trucks *out of the shop!*

Change to **SOVAC OIL**

STANDARD OIL OF NEW YORK DIVISION • WHITE STAR DIVISION • LUBRITE DIVISION • MAGNOLIA PETROLEUM COMPANY
CHICAGO DIVISION • WHITE EAGLE DIVISION • WAHAMS OIL COMPANY • GENERAL PETROLEUM CORPORATION OF CALIFORNIA

**SOCONY-VACUUM
OIL COMPANY,
INCORPORATED**

(CONTINUED FROM PAGE 56)
conditions during or after any storm.

Over Snoqualmie Pass, for example, the average daily travel is 10 stages, 300 freight trucks and 1000 passenger cars. It is of the utmost importance from the economy standpoint to turn them back. In the control of traffic through a pass, in the case of a heavy slide, it is not an exaggeration to say that keeping trucks from going in may save the equivalent of the radio equipment cost at that point in the case of a single slide.

"There is a fixed radio station of 50-watt capacity at each of the eight dis-

trict offices and headquarters," said Mr. MacVicar." There are also nine other field stations equipped with a 10-watt sets. Finally, there are 15 pieces of mobile equipment, mostly snow plows, with some passenger cars and one supervisor's truck, equipped with 10-watt, two-way sets and 35 cars and trucks with receivers, only.

"The 10-watt transmitters on the plows are of special design, to withstand the extremely low temperatures, and they are capable of transmitting to a radius of approximately 100 miles."

The uses to which radio is put are, first, to collect information as to storm

conditions and snowfall throughout the state. Second, to disseminate this information not only among the whole maintenance organization but others interested as well. Third, to direct the movements of the snow-fighting forces and equipment. Fourth, to keep the central headquarters and the district headquarters informed of all details of the battle with the elements as it progresses.

In relation to the first and second functions, radio reports from the field are made during the day as to the temperatures, snowfall, slides, progress of storms, etc. The home office in Olympia prepares from these field reports a general conditional report, which is radioed back once a day to all stations. This daily report is also made available in multigraph form to newspapers, trucking companies, automobile clubs, and in fact to anyone interested. For those who might wish more frequent reports than these daily ones, there is always the privilege of tuning in with their own receivers and getting the reports from the various highway field stations as they come on the air.

The third function, that of directing the forces, needs little explanation. There must be a directing head, and he is the maintenance engineer. Through his office the progress of a storm is watched. He decides how and where the men and equipment are to be mobilized to meet it. It is not uncommon to send a rotary snow plow or trucks, working in a pass where conditions are moderate, half way across the state to some place where conditions are acute.

Finally, the two-way stations on the mobile equipment put the operators in a position now that they were never in before to cooperate with headquarters. They can inform the latter at any moment of the progress of their work, ask for more help or equipment, order needed repair parts or services, etc.

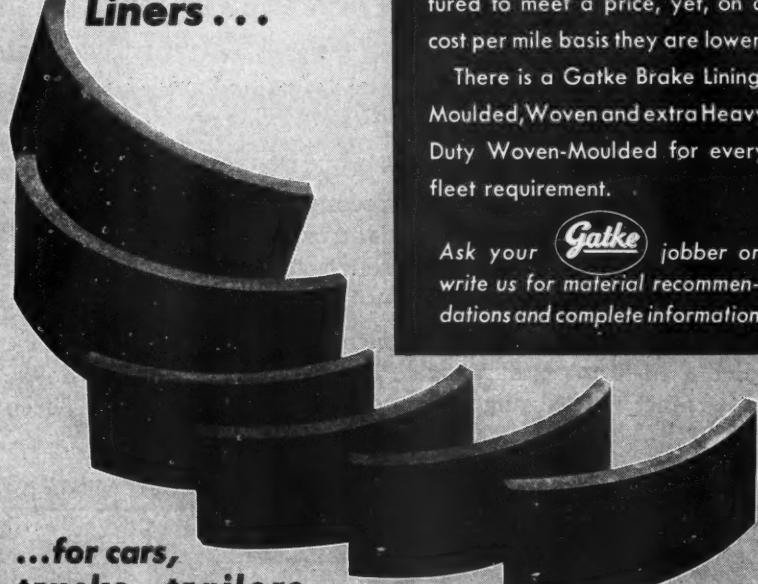
"APPROXIMATELY, what does it cost to fit up a truck or plow for two-way radio operation? What will a 10-watt or 50-watt fixed station cost?" Mr. MacVicar was asked these questions, with the end in view that trucking companies or others might be considering the establishment of broadcasting facilities, fixed or mobile, to fill some function in their operations. Again, Mr. MacVicar had recourse to a piece of paper, but before passing over the figures he made these important observations:

"All radio broadcasting equipment must be licensed, governed and regulated by the Federal Communications Commission. Such licenses are granted
(TURN TO PAGE 60, PLEASE)

QUALITY that STOP Hazards and High Costs



**Gatke Brake
Liners . . .**



**...for cars,
trucks, trailers,
buses, and tractors.**

GATKE CORPORATION, 228 No. La Salle St., Chicago, Ill.

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COMMERCIAL CAR JOURNAL
JANUARY, 1938

BUSINESS WANTED IT FORD BUILT IT



New One-Tonner BRINGS FORD V-8 ECONOMY TO ONE-TON RANGE

Many operators of hauling and delivery units have asked Ford to build a unit that would handle one-ton loads with the same proved performance and economy that Ford V-8 units of larger and smaller capacities bring to their respective fields. Result: The new Ford V-8 One-Tonner.

The One-Tonner has a 122-inch wheelbase. It has been designed to take advantage of the unusually economical 60-hp. V-8 engine, although the 85-hp. V-8 is also available where higher speed and faster acceleration are desired.

Though low in price, the One-Tonner has the time-proved features that make the larger Ford V-8 Trucks so reliable. Frame, springs and axles are designed for high reserve strength, without penalizing economy with excess weight.

Visit the nearest Ford dealer and arrange for an "on-the-job" test with your own loads and your own driver. While there, you will also see the new 1938 Ford V-8 134-inch and 157-inch wheelbase Trucks and the new 112-inch Commercial Cars — the finest, best looking units in all Ford history.

New Features of 1938 Ford V-8 Trucks

New styling • More comfortable cabs, more head room, new interior trim, softer seats • Quicker stopping brakes

- New 134-inch wheelbase, improved load distribution • For 134 and 157 inch trucks, new standard frame width

- Larger spindles • Easier steering, roller type with 18-inch wheel • TIME-PROVED FORD TRUCK FEATURES: V-8 engines, 85 and 60 hp. • Full-floating rear axle with tapered roller bearings

- Straddle-mounted pinion, ring-gear thrust plate • Centri-Force Clutch, low pedal pressure, high torque capacity • Needle roller bearing universal joints on 134 and 157 inch trucks • Full torque-tube and radius-rod drive, free-shackled springs • Ford Engine and Parts Exchange Plan.

1938 FORD V-8 TRUCKS

AND
COMMERCIAL
CARS

F O R D ' S S E V E N T H Y E A R O F V - 8 S U C C E S S

NATIONAL
COMMERCIAL CAR JOURNAL
JANUARY, 1938

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(CONTINUED FROM PAGE 58)

only to sending stations that can be construed as being definitely in the public interest according to the Commission's judgment. Anybody and everybody cannot go in for broadcasting.

"This department was naturally granted a license, as its work is in the public interest. We then decided upon the low-power, 10-watt sending stations on mobile equipment and for the lesser field stations for the reason that it would enable us to conform with the Commission's regulation to permit the

employment of an operator for such stations holding only a third-class license. Thus, it is possible for us to train our own men who operate the plows and trucks, or are regularly employed around the fixed stations, so that they can secure this third-class license. This small equipment is not complicated and these men can readily learn to operate it and do so with little interruption to their regular duties. Had we gone to more powerful stations, it would have been necessary to employ a regular radio operator devoting his time to that alone."

With that, he turned over the sheet of paper and this is what was found upon it:

Cost of installation of two-way, 10-watt radio truck units, based on Seattle radio equipment prices latter part of 1936.

Mobile Stations	
Transmitter	\$425
Receiver	48
Motor-generator	112
Antenna	50
Labor and Misc.	86
	\$721
Fixed Stations	
50-watt stations—approx.	\$2000
10-watt stations—approx.	500

It appears that the 10-watt fixed stations cost less than the mobile stations of the same output. This is because of the special character of the latter, the greater cost of the antenna and other factors incident to these mobile sets.

Trigger Trick Troubles

(CONTINUED FROM PAGE 25)

minute and pressure in lb. per sq. in. In figuring these factors, figure on a minimum of 80 lb. pressure and a consumption of not less than 7 or 8 cu. ft. per minute for each standard spray gun. Allowances should also be made for other shop requirements for compressed air, as well as for the length of hose from compressor to gun and size of hose as drop in pressure can be considerable from compressor to gun. Drop in pressure, however, is taken care of where an air transformer is used.

With the equipment well primed for use, as it should be at all times, real trouble shooting of trigger tricks comes on the job itself, so here goes with a trouble chart that should take the mud out of the eyes of every paint shop trigger man.

Spraying

Trouble: Jerky or fluttering.

Possible cause: In general caused by an air leakage in the fluid line. Loose fluid tip or mutilated gasket. Loose packing nut or dry packing. Loose fluid tube. Clogged vent hole in cup lid.

Remedy: Tighten fluid tip. Replace gasket. Tighten nut. Oil packing. Tighten fluid tube. Clean out vent hole. (Order of remedy is given in same order of possible cause.)

Trouble: Excessive vapor.

Possible cause: Too much atomizing air pressure for the amount and weight of material at the spray gun nozzle.

Remedy: Reduce atomizing air pressure or increase flow of material to spray gun nozzle.

(TURN TO PAGE 62, PLEASE)

COMMERCIAL CAR JOURNAL
JANUARY, 1938

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THE THRIFT CARRIERS FOR THE NATION



FOUR GREAT LINES

of half-ton, $\frac{3}{4}$ -ton, 1-ton and $1\frac{1}{2}$ -ton trucks . . . 5 wheelbase lengths . . . with a wide variety of models to suit your haulage needs . . . all of them big, rugged, dependable truck units with Valve-in-Head Engines, Perfected Hydraulic Brakes and Extra Sturdy Frames . . . designed and built to give you more miles of service at lowest cost per mile.

CHEVROLET MOTOR DIVISION, General Motors Sales Corporation, DETROIT, MICH.

**NOW ON DISPLAY—ASK FOR A DEMONSTRATION
SEE YOUR CHEVROLET DEALER**

(CONTINUED FROM PAGE 60)

Trouble: Spattering.**Possible cause:** Too much material for the amount of air pressure at the spray gun nozzle or dirty air cap.**Remedy:** Increase atomizing air pressure or decrease flow of material to spray gun nozzle. Clean air cap.**Trouble:** Unbalanced.**Possible cause:** Dried paint or dirt in center orifice or spreader jet holes of air cap.**Remedy:** Clean air cap.**Trouble:** Split spray.**Possible cause:** Too much air pressure or too wide spray.**Remedy:** Reduce air pressure at either the air transformer or spreader adjustment valve.**Trouble:** Too small spray.**Possible cause:** Too little fluid pressure. Dirty holes in air cap. Too low setting of spreader adjustment valve. Lumpy material.**Remedy:** Increase fluid pressure. Clean air cap. Increase setting. Strain material and clean spray gun and hose line.

Spray Gun

Trouble: Fluid leakage from spray gun nozzle.**Possible cause:** In general improper seating of fluid needle. Fluid needle packing nut too tight. Lumpy material. Dirty fluid tip.**Remedy:** Loosen packing nut slightly. Strain material and clean gun and hose. Remove fluid tip and immerse in solvent and blow out with compressed air.**Trouble:** Air leakage.**Possible cause:** From spray gun nozzle caused by improper seating of air valve due to dirt or wear. From oil hole in top of spray gun body, worn valve stem.**Remedy:** Snap trigger several times and if trouble is not remedied, replace air valve. If worn valve stem, replace air valve.**Trouble:** Fluid leakage from fluid needle packing nut.**Possible cause:** Loose fluid needle packing nut. Dried packing.**Remedy:** Tighten packing nut. Restore packing with few drops of oil or replace it.

Air Transformer

Trouble: Air leak from small hole in regulator cap.**Possible cause:** Improperly seated or broken diaphragm.**Remedy:** Remove and reseat or replace regulator diaphragm.**Trouble:** Insufficient removal of moisture from air.**Possible cause:** Moisture filled transformer. Moistured saturated waste sack.**Remedy:** Drain transformer. Replace with dry sack.**Trouble:** Excessive air pressure drop when spray gun trigger is pulled.**Possible cause:** Too many spray guns or other items of equipment in simultaneous operation. Obstructed air passages. Dirty baffles or waste sack.**Remedy:** Shut off all equipment except spray gun and note air pressure drop on gage. Inspect waste sack for dirty, hardened waste. Remove air regulator valve and inspect valve seat. Seat should be flush with its container edge. Remove and clean baffles or sack.**Trouble:** Gradual building up of pressure on pressure gage after adjustment.**Possible cause:** Improper seating of air regulator valve seat due to dirt accumulation on seat.**Remedy:** Remove regulator body and tap sharply on end of regulator valve. If this does not remedy condition, remove valve and clean valve seat.

Pressure Feed Tank

Trouble: Failure of air pressure to (TURN TO PAGE 64, PLEASE)COMMERCIAL CAR JOURNAL
JANUARY, 1938

EBERHARD FITTINGS Enhance

The NEW White MERCANDOR

AMONG the outstanding features that have brought instant acceptance for the new White Merchantor is found the new Eberhard Drivers Seat Pedestal, No. 575716. Designed specifically for cab-over engine bodies, this remarkable appliance combines universal seat adjustment and complete swivel action for utmost convenience.

In addition, Merchantor's doors have Eberhard locks of special design to fasten the sliding doors in both open and closed positions.

For superior body fittings, standard or special, consult your Eberhard dealer or write to,

EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co.
CLEVELAND, OHIO

EBERHARD SEATING APPLIANCES
FOR FULL DETAILS SEE CATALOG NO. 11.

E

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THIS LONG-WEARING BRAKE LINING SAVES YOU MONEY

THREE can be no question about the economy of American Brakeblok in commercial use. Operators who now use it exclusively do not hesitate to say that American Brakeblok gives longer wear, at less cost, than any other lining they have ever known.

Brakes relined with American Brakeblok require far less adjustment. They maintain correct uniform clearances for much longer periods, thus keeping equipment out of the shop.

The safe-stopping qualities of American Brakeblok are known to all. They are extra insurance against loss through accidents.

When you make your next purchase of brake lining—whether it be in rolls, sets, or thick blocks—get American Brakeblok and watch it save you money.

AMERICAN BRAKEBLOK • 4600 Merritt Ave., Detroit, Michigan
Division of American Brake Shoe & Foundry Co.



You get safer stops and longer wear, yet make fewer adjustments, when you equip with American Brakeblok.

*American
Brakeblok*



(CONTINUED FROM PAGE 62)

Trouble: Gradual building up of air pressure in paint tank after adjustment.

Possible cause: Improper seating of air regulator valve seat due to dirt accumulation on seat.

Remedy: Remove regulator body cap and tap sharply on end of regulator valve. If this does not remedy condition, remove valve and clean valve seat.

Trouble: Air leak from small hole in regulator body cap.

Possible cause: Improperly seated or broken diaphragm.

Remedy: Remove and reseat or replace regulator diaphragm.

Trouble: Increase air pressure to spray gun. Thin or reduce material.

Trouble: Jerky or fluttering spray.

Possible cause: Vent hole in cup cover closed or clogged with paint. Lack of material. Fluid tube loosened from cup lid. Loosened cup coupling nut.

Remedy: Clean vent hole of material. Open cup and inspect amount of material in container. Tighten fluid tube against cup lid. Tighten coupling nut on fluid inlet nipple or the same nut on spray gun.

Suction Feed Cup

Trouble: Too small spray.

Possible cause: Not enough air pressure or material of too heavy consistency.

Remedy: Clean vent hole of material. Open cup and inspect amount of material in container. Tighten fluid tube against cup lid. Tighten coupling nut on fluid inlet nipple or the same nut on spray gun.

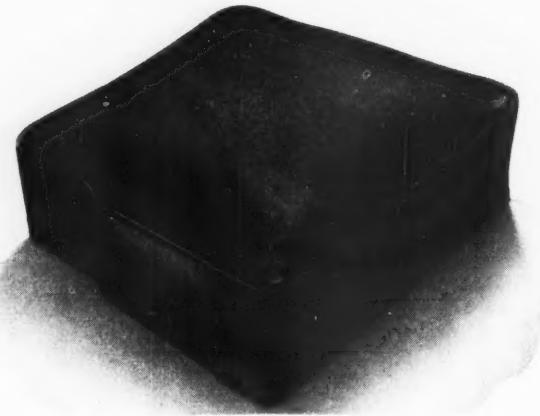
Surge Tanks

(CONTINUED FROM PAGE 42)

It is necessary to have a vent in the tank to prevent building up pressure when the system is hot. Most tanks hold either 3 or 4 qt. Some tanks come with a special condenser unit. One model returns the fluid to the upper radiator hose through a one-way valve that prevents any possibility of the tank being filled through this connection.

Some vehicle manufacturers are recommending the use of the tanks especially in multi-stop service or where long periods of idling are encountered. They are especially valuable where evaporating type of anti-freeze is used.

SPONGEX CUSHIONS TRADE MARK REG. U. S. PAT. OFF. are a wise choice



From every angle, Spongex Cushions are a wise choice. This is proved daily by the increasing demand for these seats, as satisfied truck owners continue to replace other kinds of cushions with Spongex.

Spongex Cushions are made of deep, soft, sponge rubber, of a special construction designed to absorb road shocks and provide complete driving comfort for your men.

The low initial cost will surprise you. And economy does not end with the initial cost. Expen-

sive repair bills are eliminated, for Spongex Cushions will not sag, and there are no springs to break. Rugged, durable coverings are used. The long life of Spongex Cushions saves you money, too—their sponge rubber fillers last the life of the truck.

The type of construction, the style of covering, the size—these depend upon what you order. Every cushion is guaranteed to be satisfactory to you. Write for complete information and prices, without obligation—it will pay you to install Spongex Cushions in your trucks.

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BUS CUSHIONS • TRUCK CUSHIONS • CUSHION FILLERS
DOOR SEALS • CORD • WEATHERSTRIP • TUBING

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After Hours

(CONTINUED FROM PAGE 30)

which appeared in the Philadelphia Evening Bulletin:

"Every motorist who has ever crawled laboriously up a long hill behind a ponderous truck making the grade in low, unable safely to pass, will rise to greet with three hearty cheers the announcement that the Pennsylvania Highway Department is coming to his relief. A third lane is being built into two-lane roads on the ascent of long grades, for the exclusive use of trucks.

"This measure, already applied in several mountainous sections and scheduled for extension, will expedite travel, relieve the outraged feelings of pleasure car operators, and contribute to reduction of the accident toll. It might well be supplemented by widening of some of the heavily-traveled two-lane arteries on the level, at occasional intervals, by addition of special lanes for trucks, like switches on a one-track trolley.

"Eventually, on overburdened routes, commercial travel and movement of pleasure vehicles will doubtless have to be segregated. For the present it may suffice to side-track truck traffic at points where it aggravates congestion."

COMMERCIAL CAR JOURNAL
JANUARY, 1938



America's gigantic utilities and all vocations employ a countless number of GMC trucks!—and properly so, since a great share of industry's work is done on wheels! For 36 years, GMC has improved and expanded its line of commercial vehicles which today includes "from the smallest to the largest" in trucks.

Three New GMC Models!—as pictured—complete the most extensive line of trucks ever offered by one manufacturer ($\frac{1}{2}$ to 12 tons). Particularly significant: *GMC prices are still crowding the lowest!*

Time payments through our own Y. M. A. C. Plan at lowest available rates

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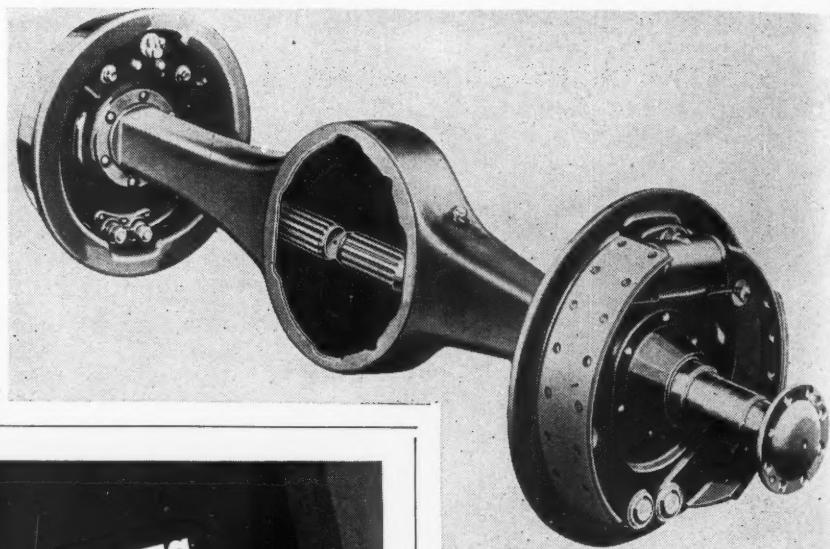
new 1-TON



new 1 1/4-TON

**Timken Presents
New Axle Housing**

AN important development recently announced by Timken is a new housing designed to accommodate any one of three types of final drive: Bevel Gear, Double Reduction or 2-Speed. The housing is of one-piece pressed steel construction, with rectangular section. It is now the load carrying member of all standard Timken Axles. It is built



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HYDRAULIC DUMP UNITS
ALL TYPES for ALL PURPOSES!

1. Heil "Straddle-Mount" telescopic hydraulic hoist and 17 cu. yd. capacity Heil body. 2. Heil Jack-Knife hydraulic Hi-Lift unit. 3. Heil Twin Cylinder hydraulic dump unit.

Heil Hydraulic Dump Units are made in all capacities, all types, and all sizes for all purposes . . . Every Heil unit is designed by expert transportation engineers who know what is required in the field and therefore provide exactly the right type of Heil equipment to best serve your needs . . . Ask for the name of your nearest Heil representative and be sure to get Heil recommendations before you buy new dumping equipment. Address: *(Remember to visit the Heil Exhibit at the Cleveland Road Show)*

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GENERAL OFFICES: MILWAUKEE, WISCONSIN
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in three basic capacities from $1\frac{1}{2}$ to 4 tons.

A choice of brake types and sizes is offered with each capacity of the new housings, both hydraulic or power actuation being available as standard equipment.

White's 750

(CONTINUED FROM PAGE 36)

holes in the connecting rod below the piston skirt provide additional lubrication to cylinder side walls.

The 750 is equipped with a dry, single plate clutch, a selective-type five speed transmission direct in fourth. All gears are of carburized and heat-treated alloy steel, and the speedometer drive is enclosed in the rear of the transmission. The unit also has a double reduction, full-floating rear axle with a one-piece cast housing.

With cast steel wheels as standard, the Model 750 is equipped with 9.00-20 tires, single front, dual rear. It is equipped with four wheel internal expanding, hydraulically operated brakes.

The 750T tractor, a sturdy and capable unit, has the same engine and transmission as the Model 750 truck. For varying road conditions, the tractor model makes available either a single or double reduction full floating rear axle. Rear springs on the tractor are of the slipper type, with spring size of 50 in. x $3\frac{1}{2}$ in.

Linderman Brakes on N. Y. Trucks

A fleet of new trucks ordered by the Department of Purchases, city of New York, is being delivered equipped with Linderman brakes, following acceptance of bids from leading truck manufacturers showing Linderman brakes as optional equipment.



Bakery makes big savings with Store-Door Silvertowns

In Los Angeles, La Espiga de Oro Bakery operates 14 trucks which travel well over a half million miles per year. Delivering baked goods, these trucks make as many as 85 regular stops per truck each day and hundreds of traffic stops and starts. Tire costs were running high—delays costly and troublesome.

Then they put on Goodrich Store-Door Silvertowns—tires specially designed for this kind of service. Tires average better than twice the mileage formerly obtained! The monthly cost for tire maintenance is less than one-third—almost one-fourth of what it was before! Delays are as one to eight! Not one tire has failed in the sidewall!

"We used to believe," says Mr. Joseph Ruiz, Proprietor, "that price was the important thing. But we have been so impressed with the extra mileage obtained with Store-Door Silvertowns that we fully realize now we would have saved much money had we used your tires long ago."

Built to Save Money

In all kinds of delivery service where stops and starts are frequent, Goodrich Store-Door Silvertowns are knocking down costs. A specially designed tread gives greater road contact and more

traction because of numerous non-skid edges. Extra thickness provides longer wear. In all the most popular sizes, this tire is Triple Protected in the sidewalls, too. This money-saving invention checks 80% of premature tire failures—lets tires wear out s-l-o-w-l-y.

Call the Goodrich dealer. He'll give you all the facts and show you how you, too, can save money.

HOW TRIPLE PROTECTION WORKS

1. **PLYFLEX**—distributes stresses throughout the tire—prevents ply separation—checks local weakness.
2. **PLY-LOCK**—protects the tire from breaks caused by short plies tearing loose above the bead.
3. **100% FULL-FLOATING CORD**—eliminates cross cords from all plies—reduces heat in the tire 12%.



Goodrich ^{Triple} Protected Silvertowns

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES.

Mr. Eastman Says

(CONTINUED FROM PAGE 26)

Association at White Sulphur Springs, Virginia, on Sept. 3, sounded the trends of the hundreds of decisions now issuing from the Commission, and gave the motor carrier industry a very good indication as to what it may expect in the future, regulation-wise, broadly hinting at how the near-impasse in the Bureau may be met.

Congress, in enacting the Motor Carrier Act of 1935, set the law up in two

divisions. Following modern legislative practice, one division constituted a declaration of policy upon which the new law was to be founded, and the other consisted of the specific mandates declaring just what the Commission and the carriers must do.

Included in the statement of policy is the following:

"It is hereby declared to be the policy of Congress to regulate transportation by motor carriers in such manner as to recognize and preserve the inherent advantages of, and foster sound economic conditions in, such transportation

and among such carriers in the public interest; promote adequate, economical, and efficient service by motor carriers, and reasonable charges therefor, without unjust discriminations, undue preferences or advantages, and unfair or destructive competitive practices; improve the relations between, and coordinate transportation by and regulation of, motor carriers and other carriers; develop and preserve a highway transportation system properly adapted to the needs of the commerce of the United States and of the national defense; and cooperate with the several States and the duly authorized officials thereof and with any organization of motor carriers in the administration and enforcement of this part."

COMMISSIONER EASTMAN takes the view that this statement of policy was enacted in the bill not only as a foundation for the mandates that follow, but for the express guidance of the Commission itself in administering the act. Thus in this clause alone, under Commissioner Eastman's construction, the Commission is given authority to do all needed things to "develop and preserve a highway transportation system properly adapted to the needs of the commerce of the United States and of the national defence," and to prohibit "unfair or destructive competitive practices, improve the relations between and coordinate transportation by, and the regulation of, motor carriers and other carriers."

"The declaration is so broad and general in its terms," says Commissioner Eastman, "that it would be difficult to set aside any specific action of the Commission on the ground that it was in violation or disregard of the expressed policy of Congress."

No one understands the meaning of coordination more, nor does anyone have a sounder knowledge of highway transportation in the United States than Commissioner Eastman. As Coordinator of the Railroads he conducted the most extensive study that has ever been made by a governmental body as to the transportation needs of the United States. His interpretation of the intention of Congress to grant the broadest possible powers to the Commission should be considered by every motor carrier operator in relation to the future of the industry and his own connection with it. It means that in the supervision of motor carrier operation the Commission will not merely confine its regulating to seeing to it that carriers comply with specific regulations and that the industry is constantly policed, although this will be done.

It means further that when a motor carrier's rights to operate, his rights to
(TURN TO PAGE 70, PLEASE)

TRUCKTOR

TURNS 4-WHEEL TRUCKS INTO 6-WHEEL FREIGHTERS

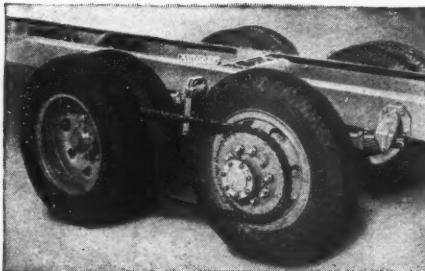


GETS HEAVY HAULS THRU SAFELY—SURELY—WHEN OLD MAN WINTER TRIPS UP COMPETITIVE TRAFFIC

FOUR Wheel Truck + TRUCKTOR = Double Payload and Double Income. That is the proven formula—checked and double checked in every branch of hauling over sufficient years to prove its accuracy.

So What? Just This!—If your loads exceed four-wheel truck capacity, it has been demonstrated beyond risk of loss or failure that you can turn the truck into a doubled capacity vehicle with Trucktor—ON AN OUTLAY THAT MAKES OPERATIONS SO PROFITABLE THAT THE ENTIRE EQUIPMENT WILL USUALLY PAY FOR ITSELF TWICE OVER, OR BETTER, IN THE TIME IN WHICH THE TRUCK ALONE WOULD BE EXPECTED TO AMORTIZE ITSELF.

FURTHER—A four-wheel truck is a standard, safe, proven vehicle. TRUCKTOR duplicates standard truck design—no gadgets—but engineered to the simplified elements of dependable mechanism. Its addition makes no changes in fundamental truck design, requiring only a lengthened frame and body. It creates a thoroughly integrated, single unit vehicle which cannot jack-knife, which brakes in one operation, which carries no burdensome dead weight of fifth-wheel structure—which requires no special driver—handles as easily and naturally as a four-wheel vehicle—fast in traffic—a truck that goes thru.



ALL WEATHER SERVICE! A Trucktorized Six-Wheeler will operate under bad road conditions that will stop other heavy-haul vehicles dead. Its DETACHABLE CHAIN AND SPROCKET 4-WHEEL DRIVE furnishes the extra traction to drive the load through snow and mud and safely over ice.

The chains of this husky drive are attached or detached in a few minutes without removal of wheel. Trucks generally require such aid only 5% or 10% of the time. Detachability makes the drive a help only when needed—puts no drag on progress when not needed.

TRUCKTOR IS A MONEY MAKER—Get its performance record in your line of trucking. Write.

THE TRUCKTOR CORPORATION • 156 WILSON AVE., NEWARK, N. J.

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COMMERCIAL CAR JOURNAL
JANUARY, 1938

"Sure; . . . a spark plug in a 'Diesel'!"



In the "plain English" of John Q. Public, if an engine burns heavy fuels . . . injected cold . . . it's a "Diesel." Let the technical man quibble and limit the term to high pressure compression ignition engines . . . "So what?" says this truck driver. "I know what I want."

By using a spark plug instead of great pressure to ignite the fuel, that famous Swedish engineer, Hesselman, obtained many important advantages—all found in Waukesha-Hesselman Engines . . .

Spark plug ignition starts a Hesselman Engine easier than a gasoline engine because compression pressures can be moderate.

Spark plug ignition is *precisely timed*, not spontaneous . . . excessive cylinder pressures can't build up, thus bulky frames and flywheels are eliminated. Snappy acceleration is a Hesselman by-word.

Spark plug ignition sees all fuels in the same light—even those hard-to-fire oils that are dynamite to compression ignition engines. There is no ignition lag.

Spark plug ignition makes mechanical up-keep low, because both compression and combustion pressures are moderate. Cylinders, bearings, crankshafts are under no violent shock reversals.

Aren't all these advantages—easiest starting, snappy performance, safe working pressures, and low up-keep—worth more than a few additional gallons of 7¢ fuel oil a day? Waukesha-Hesselman Oil Engines show the *greatest over-all economy*. Actual records of their operation over thousands of hours prove it. The whole story is told in Waukesha Engineering News Record No. 5—write for a copy.

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN

NEW YORK

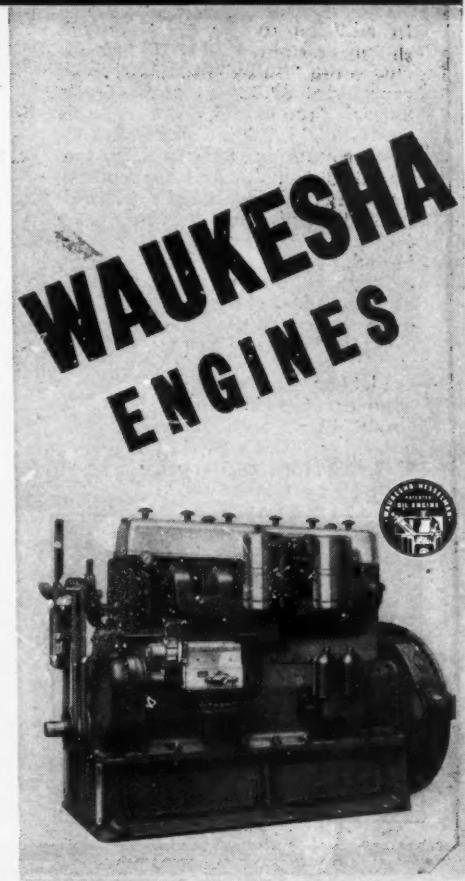
TULSA

LOS ANGELES

THIS IS NO. 1 OF A SERIES ON THE WAUKESHA - HESSELMAN ENGINE

COMMERCIAL CAR JOURNAL
JANUARY, 1938

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(CONTINUED FROM PAGE 68)

specific routes or to the hauling of specific commodities, his tariffs, his rules of operation and safety, and the hundred other things which must come before the Commission for regulation and decision, are being considered, not only will the specific rules and regulations be applied, but even greater consideration will be given to the building up in the United States of a coordinated transportation system wherein the rail, motor and other carriers may contribute their greatest individual share in the building of a complete and

efficient transportation system.

If the granting of rights or other proposed remedies or orders appear to be inconsistent with the interests of the public as represented in the general transportation scheme, individual sacrifices may be in order in the protection of the public interest. Thus, says Commissioner Eastman, "the public interest in transportation requires something more than the mere protection of shippers, travelers, employees, or other members of the public against extortion, injustice or dangerous conditions. It is quite as necessary to have efficient

carriers who can keep up with the march of the times."

THE application of these principles to the motor carrier industry gives rise to the present situation in the Commission with reference to its regulation. Unfortunately regulation found the industry in a comparatively unstable condition. The backbone of the industry from the standpoint of numbers and tonnage is still the small operator. This does not mean so much that the industry is less efficient, but it does mean that the industry lacks the financial stability and organization of the older type of carrier. Thus, the "fostering guardianship and control" of the Interstate Commerce Commission quoted in the Commissioner's address from the Supreme Court comment relative to the 1920 Transportation Act, and which he holds expresses the same thought contained in the Congressional statement of policy in the Motor Carrier Act, presents the Commission with wards so numerous, so scattered throughout the highways of the nation, and so devoid of what may be termed "parental control" in that both finances and organization are inside the truck cabs and constantly moving about, that the Commission finds itself much like the old woman who lived in a shoe and had so many children she didn't know what to do.

Commissioner Eastman, however, has never been one to sidestep an obligation and has ever been willing to look a situation squarely in the face with a view of solving it. Holding that one of the principal difficulties encountered by the Commission is a lack of understanding on the part of Congress of the magnitude of the regulatory job when it apportioned to the Commission money on the basis of the smaller tonnage handled as compared with the railroads, and without regard to the vastly increased number of individual motor carrier operators, he places much of the blame for the congestion of the work to the niggardliness of Congress. He states that the Motor Carrier Bureau, unless it can secure financial relief "is in serious danger of bogging down, notwithstanding that our staff has put in an extraordinary amount of overtime work for which, unlike some others, it receives no pay."

The Commissioner, however, has a remedy and obviously expects to put it in operation during the coming year, with or without additional financial help from Congress. He has already instituted within the Commission itself a study of procedure and methods as a result of which many of the present cumbersome methods of handling dis-

(TURN TO PAGE 72, PLEASE)

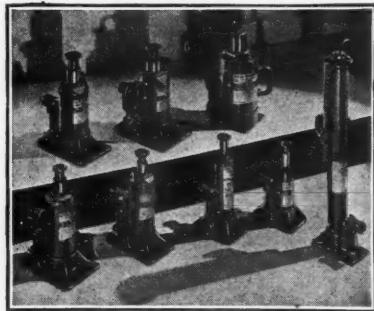
Be Wise and Standardize on HEIN-WERNER Hydraulic Jacks

Consider every feature, point by point, and you'll surely agree that it will pay you to have a Hein-Werner Hydraulic Jack in every truck and car in your fleet. All models in this complete line are built right and priced right.

A Complete Line

In addition to the 5 ton model, shown at right, the H-W line includes the "Bullet" model, 1½ ton capacity at \$2.80 . . . Light Truck Special, 2 ton model, \$3.70 . . . 3 ton model, \$6.95 . . . 7 ton model, \$11.75 . . . 12 ton model, \$17.50 . . . 20 ton model, \$30.00 . . . And for modern passenger cars, Light Model BUMPER-LIFT only \$4.10 . . . Heavy Model, \$5.45 . . . All prices are net to dealer, and slightly higher on West Coast.

Model E5.9A (shown above) is an exceptional value . . . Low 9" . . . Lift 6¼" . . . Extension 3' . . . High 18¼" . . . Weight 24 lbs . . . Dealer price \$8.95 (West Coast \$9.65).



Ask your jobber or write us for details on these truck jacks. Also on the complete line of FLOOR JACKS—2, 3, and 4 ton capacity—ideal for work in your shop or garage.

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FEW MODELS ENOUGH TO DO THE WORK OF MANY
HEIN-WERNER
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Real Dirt Movers



St. Paul
HYDRAULIC

Fleet of ST.PAUL Model 102 Hi-Dumpers recently purchased by R. P. Englund of Murdo, South Dakota, for rock hauling and dirt removal on the Tongue River Dam in Montana.

Body is ST.PAUL Type 673 constructed of $\frac{1}{2}$ in. material with "I" beam braces running from one side of the body to the other.

Bottom reinforced with 2 in. oak floor and $\frac{3}{8}$ in. wearing plate.

H-DUMPERS

70° DUMPING ANGLE
DOUBLE ACTING - POWER UP - POWER DOWN

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—St. Paul—
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HOISTS & BODIES

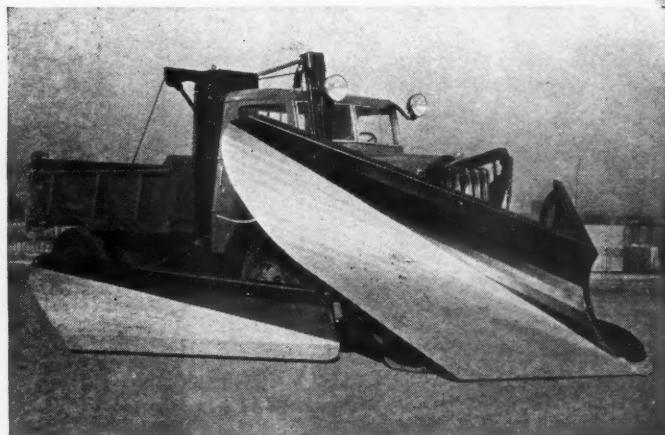
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SIMILAR UNITS WILL BE ON DISPLAY
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Model 102 ST.PAUL Hi-Dumper Hoist has a 10 in. cylinder and is of rugged construction, self contained in a substantial subframe. Its high dumping angle of 70 degrees affords clean, fast dumping of material from scoop end bodies.

**The deeper the snow
the more you need**

WALTER 100% TRACTION



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IN the "snow belt" where winter is WINTER and snowfall is measured in feet instead of inches, they place their dependence in Walter Snow Fighters. When ordinary snow removal equipment is slipping and skidding and stalling, they know that the super-traction afforded by Walter Four-Point Positive Drive will carry through.

In the Walter, three automatic locking or power proportioning differentials provide correct differential action between all wheels, front and rear, right and left. They divide the power so that the wheels with least traction get the least and those with most traction the most power. That is what we mean when we say the Walter has 100% Traction.

And remember it takes power and traction to buck a blizzard.

Send For Literature.

(CONTINUED FROM PAGE 70)

putes and of making inquiries concerning carriers' rights will be curtailed by the use of shortened procedure which will cut out all unnecessary and dilatory proceedings. It is believed that much of the formal procedure which now results in long delays not only in a consideration of the questions involved, but in the time consumed in taking the various steps essential to a formal proceeding, will be eliminated in favor of shortcuts.

The heart of the plan, however, to speed up the regulatory machinery, and the part most interesting to both the small and larger carrier, is Commissioner Eastman's flat declaration for a decentralization of the present regulatory setup. At the very inception of the organization of the Motor Carrier Bureau it was thought that most of the regulatory activity might be transferred to the field. Joint boards were set up in each state, authorized to act in a similar capacity to that of Commission examiners. However, a Washington representative was appointed to sit with the joint boards and all action by the joint boards was made subject to review in Washington. Individual examiners were also placed at strategic points throughout the country and authorized to hold hundreds of hearings, with the resulting

reports coming to Washington for review. Many of these reports were in the form of recommendations by examiners, which became final only after the filing of exceptions by interested parties and then a final determination by the Commission. When it is considered that more than 80,000 applications for certificates were filed under the "grandfather" clause alone, it is not surprising that Commissioner Eastman sees the possibility of the whole system "bogging down." It will probably take another year to dispose of these applications. In the meantime the Commissioner says that "questions of construction and interpretation with respect to the Motor Carrier Act have swept on us like a flood." It is obvious that these questions will continue to increase for a long time to come, since the Motor Carrier Act, unlike the various acts regulating the railroads, called for practically complete regulation at its inception.

The trend of reorganization in the Motor Carrier Bureau is to stop the flood of questions coming to Washington for decision and to allow these questions to be finally disposed of in the field. This may result in giving more authority for final action to State boards and other State authorities. It certainly presages the conferring of broader powers to Commission exam-

iners or other officials permanently stationed throughout the country.

Motor carrier operators should profit by this proposed reorganization. Quicker decisions on disputed points will leave the operator with more time to devote directly to the service of the public and to the business for which he is organized. The small operator should join the larger operators in studying not only the regulatory setup, but, as Commissioner Eastman's speech suggests, the needs of the country for an efficient transportation system. The operator must be ready to adapt the units which he controls and the service which he performs and proposes to perform to these general needs with a view to seeing to it that when the time comes, he will have his organization ready to make its proper contribution to the system as a whole.

S-M Spray Gun Adapter

The Sherwin-Williams Co., Cleveland, Ohio, has a new device to aid the paint man. It's a simple adapter that converts the company's patented 1-qt. pouring can into an actual spray cup, which attaches directly to the gun. In effect, it makes an extra cup out of every can. The device comes free with an assortment of 10 quarts of Opex or Kem automotive finishes.



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● DeVilbiss offers a complete line of spray guns — 33 models — designed for the efficient application of all painting materials.

Outstanding in the line is the DeVilbiss Type MBC Spray Gun, which is accepted by leading fleet owners for all general purposes. Thirty-two other DeVilbiss Spray Guns are available for special painting needs in unusual operations and with unusual materials.

But DeVilbiss goes even further. If you have an exceptional requirement which cannot be met by one of the 33 standard spray guns—DeVilbiss engineers will design and build a spray gun to fill your special needs . . . The DeVilbiss Company, Toledo, Ohio.

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DECALCOMANIA IDENTIFICATION PAYS BIG DIVIDENDS

Checks on Generating Ills

(CONTINUED FROM PAGE 29)

vent the current regulator from operating to hold the output to specified value. With this condition it will be impossible to adjust the current regulator unit to reduce the output to the specified value.)

If opening the contact points under the above conditions does not cause the output to drop, it indicates there is a short between the contact points which does not allow the resistance unit to be inserted into the generator field circuit as the points separate. Check for charred insulation, frayed or damaged wires.

2. A Fully Charged Battery and a High Charging Rate indicates the voltage regulator is not reducing the output as it should. A high charging rate to a fully charged battery will cause the battery to gas and overheat. It also produces excessive voltage in the electrical circuit which will cause armature, ignition coil, distributor point, and lamp bulb failure.

To determine if the regulator or the generator is at fault when this condition exists, disconnect the "F" (Field) lead from the regulator. This opens

the generator field circuit and the output should drop. If the output does not drop, it indicates there is a ground or short in the generator field circuit, either in the wiring harness or within the generator.

If the output does drop, the trouble has been isolated in the regulator. Reconnect the "F" (Field) lead for further checks. Remove the regulator cover and depress the voltage regulator unit armature manually, opening the contact points. This inserts the resistance into the generator field circuit and should cause the generator output to drop off. If the output does drop, it indicates voltage regulator unit setting is too high and must be adjusted. (A defective voltage regulator winding assembly would prevent the voltage regulator unit from operating to reduce the generator output as it should. With this condition it will be impossible to adjust the voltage setting.)

If the output does not drop off as the points are separated, it indicates there is a direct ground or short in the generator field circuit, some place within the regulator, which does not allow the resistance unit to be inserted into the generator field circuit as the points separate. (See Figs. 3, 4, and 5.) Check carefully for indications of this condition, indicated by charred in-

sulation, damaged or overheated wires, etc.

3. With a Low Battery and a Low or No Charging Rate, check the circuit for loose connections, frayed or damaged wires. High resistances in the charging circuit, due to these conditions, would cause the voltage regulator unit to operate as though the battery were fully charged, reducing generator output, even though the battery was still in a partly discharged condition. Clean the contact points as explained at the end of this article. Oxidized contact points cause a resistance in the generator field circuit which will not allow the generator to produce maximum output. If trouble is not oxidized contact points or in the wiring, proceed as follows, being careful to follow the correct procedure for the type unit being checked:

4. For the Type Regulator Illustrated in Fig. 6, ground the "F" terminal of the regulator to the regulator base with a screwdriver and increase generator speed. Avoid excessive speed since the generator may produce an excessive output under these conditions. With the "F" terminal grounded, one of three things will happen.

A. The generator output will increase to or above its specified value, which indicates (1) the regulator con-

LITTLE GIANT AUTOMOTIVE TRUCK EQUIPMENT

TIMELY SUGGESTIONS FOR JANUARY

The new WRECKING CRANE... powerful, sturdy, dual-speed . . . helps expand your business and profits . . . brings in new car prospects.

TEN WHEELS, for 1½-5 ton trucks, increase carrying capacity up to 10 tons. Almost every retailer and wholesaler is a prospect.

For 20 years this company has specialized in the manufacture of dependable equipment to increase the profit of truck operation. We have steadfastly adhered to very definite ideals . . . low initial cost, lower operation costs, longer life, less upkeep expense. All LITTLE GIANT products are guaranteed to satisfy in every particular.

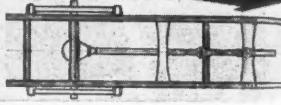
Circulars gladly furnished on any items in the line. Wire orders at our expense.

LITTLE GIANT PRODUCTS, Inc.
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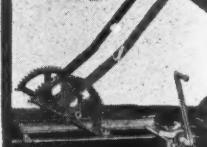


FRAME EXTENSIONS



HAND HOISTS

UNDERBODY TYPE

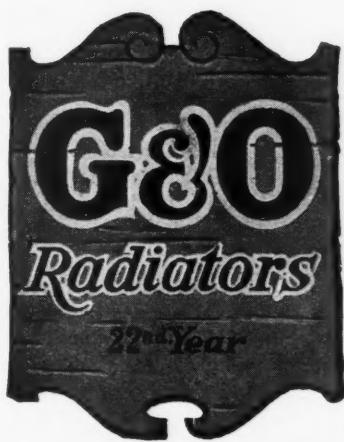


VERTICAL TYPE



WRECKING CRANES





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(We Believe They're the Best)

They are designed and built for truck service. Strong, sturdy, efficient radiators that have been "delivering" for 22 years.

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NEW HAVEN CONNECTICUT

tact points are oxidized, which puts a resistance into the generator field circuit, causing a reduced output. This oxide must be removed. (2) The voltage regulator unit is set for too low a value, preventing the charging voltage from attaining a value sufficient to keep the battery charged. (3) The current regulator unit is set for too low a value and will allow only a small charging rate. (4) The generator field circuit is open at some point within the regulator, and loose connections, frayed or cut wires must be looked for.

B. The generator output does not increase to its specified value, which indicates the generator is at fault and it must be removed for a bench check.

C. The generator does not charge at all, either with or without the "F" terminal grounded. This indicates either the generator or the cut-out relay is at fault. With the "F" terminal still grounded, remove the "GEN" terminal lead from the regulator and strike it against a convenient ground, such as the motor block, to see if a spark will occur. Do not operate for any length of time with the "GEN" lead disconnected, since this is open circuit operation and a properly operating shunt generator will build up an excessive voltage. If the spark does

occur, the trouble is in the generator. If the spark does occur, reconnect the "GEN" lead to the regulator and inspect the cut-out relay. The points may close, but, being oxidized, will prevent charging current from flowing. Clean the points. If the points do not close, the relay is either out of adjustment, or the relay shunt winding is open, or there is a direct ground within or adjacent to the relay, which prevents the relay from operating.

5. For the Type Regulator Illustrated in Fig. 7 and 8, bridge the regulator terminals marked "ARMATURE" and "FIELD" temporarily with a jumper lead and gradually increase generator speed. Avoid excessive speed since the generator may produce an excessive output under these conditions. One of three things will happen with the terminals bridged.

A. The generator output will increase to or above its specified value, which indicates that, (1) the contact points are oxidized and must be cleaned, (2) the voltage regulator unit is set for too low a value, (3) in a three unit regulator, the current regulator may be set for too low a value and will allow only a small charging rate, (4) the generator field circuit is open at some point within the regulator, either at the con-

nnections or in the voltage regulator unit winding assembly.

B. The generator output does not increase to its specified value, which indicates the generator is at fault and that it must be adjusted or removed for a bench check.

C. The generator does not charge at all, either with or without the "ARMATURE" and "FIELD" terminals bridged, which indicates that either the generator or the cut-out relay is at fault. With the terminals bridged and the generator running at a medium speed, connect a voltmeter of sufficient capacity between the "ARMATURE" terminal of the regulator and the A+ terminal of the generator (in a grounded system, to a convenient ground on the generator) in order to see if the generator can build up a voltage. If a voltage builds up satisfactorily without causing the cut-out relay contact points to close, the cut-out relay is either out of adjustment or the relay shunt winding is open. Caution: Never under any condition close the relay contact points manually while the battery is connected. The low resistance through the regulator and generator would allow sufficient current to flow to damage the equipment.

(TURN TO NEXT PAGE, PLEASE)



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The **K-D Lamp Co.**
CINCINNATI, O.

(CONTINUED FROM PAGE 75)

6. Excessive Arcing or Sluggish Action of the Contact Points in either the voltage or the current regulator unit indicates, (a) the resistance unit is open. (b) A defective winding in the regulator winding assembly. (c) The contact points are pitted or oxidized and must be cleaned or replaced. (d) The contact points are not meeting with the correct alignment or pressure, in which case they must be readjusted. (e) Shorted field coil in the generator. (f) Poor ground connection between the generator and the regulator. In-

spect the ground wire or the mounting for this condition.

Cleaning Contact Points

The contact points of a regulator, like the points of a distributor, cannot be expected to operate indefinitely without attention. It has been found that a majority of all regulator trouble can be eliminated by a simple cleaning of the contact points and minor adjustments of the armature spring tension. Clean contact points with a thin, fine-cut contact file. Do not allow the file to become greasy and do not use the file on other metals.

Fruehauf Changes

(CONTINUED FROM PAGE 33)

feet in length. It may have four large windows and a window-door on each side, or these may be changed, or eliminated altogether, by option.

Greater economy and increased protection for both load and unit, are said to result from recent improvements in the company's regular freight trailers.

Frames are of SAE-1020, steel and are of the fish belly design, with straight section at rear and front frame extension as standard. Approximately 15 per cent in strength is gained by a 1 in. increase in frame depth just ahead of the drop; and the drop itself is increased from 3 in. to 4 in., with a substantial saving in weight. A new box-type cross member at the front spring hanger contributes strength.

New improved spring eyes, double-wrapped for greater strength, are used and the rebound leaf (now standard on all models), reinforce the springs to withstand both rebound and brake torque load.

Spring shackles, drop forged and heat treated, are now straddle-mounted on the outside of hangers; and the hangers, extending down between the shackles, support shackles and prevent leaning in case of non-adjustment. Outside shackles are thicker by 28 per cent, and wider, and pinch bolted to shackle bolt.

New box type hangers, both front and rear, give much greater bearing area with increased spread on the frame, furnishing more frame support. Front hangers, now 2½ in. wider, provide for a separate attachment of radius rods and shackles.

Radius rods, now mounted at both ends on rubber bushings, not only give perfect flexibility under heavy loads and over uneven roads, but eliminate the transmission of twisting stresses from axle and frame and cushion all road shocks.

Smoother, more powerful and faster brake action result from improvements in the vacuum type braking system. The brake mechanism has fewer moving parts. Other features include 100 per cent equalization; shielded-type air vents to keep out dust, ice and wind; and 3,000 cu. in. emergency tank as standard.

Brake drums are Meehanite alloy. More metal is provided in the drums, giving faster heat dissipation and greater tire protection.

Brake shoes of 4½ in., 5½ in. and 6 in. sizes are roller bearing on a big heavy-duty "S" cam. Brake linings are moulded type, and new, 360° ball bearing-mounted slack adjuster, simplifies and speeds up adjustment.

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COMMERCIAL CAR JOURNAL

April Issue

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JANUARY, 1938

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921 General Truck Tires are built to give you more miles for less money. See page 92. Write or check post card for further particulars.

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93B CLYDESDALE builds unusual trucks for unusual jobs. See page 93. Write or check post card for complete facts.

93C Get genuine Wonder Weld for guaranteed results. See Miller Mfg. Co. advertisement on page 93. Write for details, or check post card.

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93G Read, on page 93, about the car manufacturers who specify F. O. B. "PERFECT SEAL" Gasket Paste as original equipment built in at the factory. Check post card for details.

93H Timken-6-Wheel Conversion Unit doubles the payload. See page 93. Write The Timken-Detroit Axle Co. or check post card for details.

93I Investigate the Luce Mastercraft truck bodies and Luce Merchandor. See page 93. Write direct or check post card.

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94D Make your trucks safer with TURNSIGNALS. See post card for further details.

94E You get sure-fire power with BLACK-HAWK Hydraulic Jacks. See page 94. Write or check post card for literature.

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105 You'll want to know more about the clutch improvement pioneered by LONG, which makes operation easier. See page 105. Check post card or write for fuller details.

106 If it's extra capacity you want, you will find the answer in SALISBURY Axles. See Spicer Mfg. Corp. advertisement on page 106. Check post card or write for further facts.

Miser Models

(CONTINUED FROM PAGE 19)

venturi and 0.045 in. jet. The carburetor is available on the 1-ton truck.

On commercial cars with the 85 hp. engine the standard axle ratio is 3.78 with an option of 4.11. The 1-ton truck ratio is 4.11.

Dodge

Dodge does not have any economy options to be applied to passenger cars, but on the 1/2-ton RC commercial car a 1-in. carburetor and a 3.54 rear axle ratio can be used. A throttle stop can also be used with this carburetor. On the RD 3/4 to 1 ton trucks a 1-in. carburetor is offered and a 3.9 rear axle ratio instead of the 4.3 ratio. The use of a throttle stop or governor is optional. The RE series of 1 1/2-ton trucks may have a 1-in. carburetor and a 4.875 rear axle ratio as well as a 6.5 compression ratio instead of the standard 5.8 head and a vacuum spark advance. Again the throttle stop or governor may be included.

Plymouth

Plymouth equips economy models with a special intake manifold and a 1-in. carburetor instead of the standard 1 1/4-in. carburetor. The engine will develop 65 hp. at 3000 r.p.m. with this equipment and it is used to pull a 3.7 final drive ratio. Top speed is limited to about 65 m.p.h. and acceleration is cut about 15 per cent below 40 m.p.h.

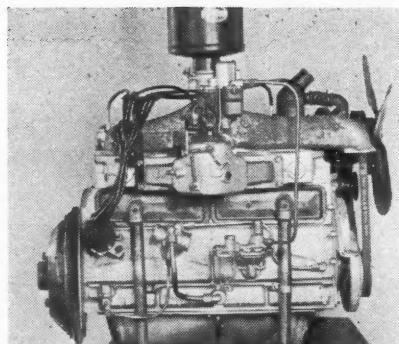
In addition to this equipment there is still another option which consists of a hardened steel throttle stop which limits speeds to 45 to 50 m.p.h. This may be altered for higher speed if desired. Manifold heat shields are a part of this package, the purpose being to increase the heat of the mixture in the manifold.

Willys

The Willys line is a standard economy line. It consists of the passenger car and the 750-lb. pick-up, both of which are powered by an engine of 100 lb. ft. of torque at 1400 to 1900 r.p.m. and a maximum of 48 hp. Both units are on a 100-in. wheelbase chassis. There are no mechanical changes from standard in these vehicles.

Hudson-Terraplane

The Hudson-Terraplane business car is powered by the new six-cylinder engine which can be equipped with a single throat manual choke carburetor with a new vacuum controlled metering pin. With the metering pin vacuum controlled instead of accelerator controlled the use of leaner metering pins is permitted.



The Hudson-Terraplane economy engine equipped with single throat manual choke carburetor using an automatic metering pin

A wide range of gear ratios is provided on these cars. The utility coach, utility coupe pick-up have 4 1/9 and 4 5/9 to 1 ratios. The panel delivery, cab pick-up and chassis and cab have standard ratios of 5 1/8 to 1 with an option of 4 5/9 to 1.

American Bantam

The American Bantam line has a 20 hp. engine and it is unnecessary to apply economy fixtures to this engine. There is available a business coupe, a panel truck and a pick-up truck.

Capitol in Business

(CONTINUED FROM PAGE 27)

figures showing that at least 1000 cars per day over each mile of highway would be required to finance and maintain the roads.

Coming at a time when there is an Administration attempt to move toward a balanced budget by the curtailment of Federal highway funds, there is some doubt that the plan will make much headway. Added to that is the contention of authorities, not necessarily skeptics, that the plan would mean abandonment of certain roads and the loss of revenue on these roads, although agreeing that even though somewhat impractical, the idea of a modern superhighway network is attractive.

The plan is similar to one advanced last session by Congressman Lea, chairman of the House Interstate and Foreign Commerce Committee. A special sub-committee has his idea under consideration. The Bureau of Public Roads has promised Senator Lonergan a prompt report on his plan.

Taking advantage of the railroad petition for a 15 per cent increase in freight rates, the motor trucking industry laid its case before the Interstate Commerce Commission on Dec. 8,

through Chester G. Moore, secretary of the American Trucking Associations, Inc., who detailed the financial plight of the industry as also justifying a like increase in rates. Mr. Moore said, rising operating costs actually made necessary an increase of about 20 per cent in order to put the trucking industry in a proper position to maintain adequate service. Nevertheless it is realized, Mr. Moore said, that inasmuch as the railroads have applied for only a 15 per cent increase, that "is about all we can expect to get for competitive reasons."

Questions asked Mr. Moore by members of the ICC, indicated they are sympathetic to the truckers' proposal to advance rates.

"We anticipate that the trucking industry as a whole will promptly avail itself of any increase which may be available by reason of the increase in rail rates," Moore said. "The financial situation of the industry is such that the action of individual carriers, if there be such, who might seek a temporary tonnage advantage by failure to increase rates, will not be controlling."

John E. Benton, counsel for the National Association of Railroads and Utilities Commissions, objected in vain to Mr. Moore's testimony. His motion to strike out the testimony as irrelevant was overruled by Commissioner Clyde B. Aitchison, chairman of the Division in charge of the railroad case.

Increases in the cost of doing business and an unsatisfactory rate level, Mr. Moore said, brought about a change in the economic position of the trucking industry. Every item of cost was said to have been increased.

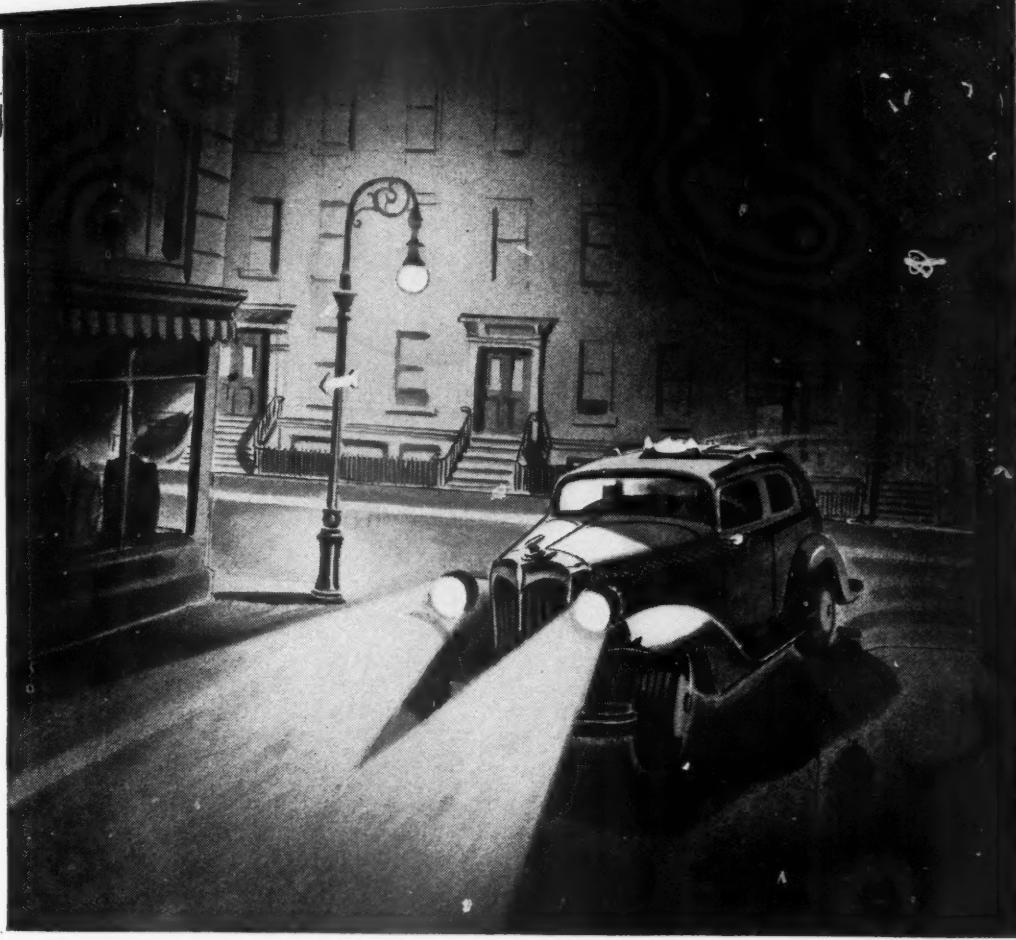
Replying to a question by J. N. Beall, general counsel for ATA, Mr. Moore said that among the factors which contributed to the situation were increases in the cost of labor, tires, fuel, taxes, insurance and general supplies. He stated that the ratio of expenses to gross revenue has been increasing and submitted an exhibit to show it had risen from 96.16 in 1935 to 99.65 for the first nine months of 1937.

An exhibit prepared by the ATA Emergency Revenue Committee, Mr. Moore said, showed that gross revenue of 434 representative carriers reporting from all over the country had increased from \$91,633,079 in 1936 to \$105,125,661 in 1937, or 14.72 per cent, while total expense had increased from \$89,358,468 in 1936 to \$104,761,618 in 1937, or 17.42 per cent.

The ratio of total expense to gross revenue by annual revenue size groups for 1937 to Sept. 30, Moore stated, was 94.98 per cent for carriers under \$100,

(TURN TO PAGE 86, PLEASE)

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MR. SHOEMAKER was on the spot.

Never, in twenty years of the taxi business, had he seen a fleet more thirsty for oil—or one with higher maintenance costs!

So he took our advice when we told him that he was losing money by trying too hard to save it!

We told him that heavy, continuous duty needed, not "bargain" oils, but the very best oil that money could buy—*Gulfpride*!

He tried it. And in spite of admittedly higher initial cost, here's what he wrote us:

"... I decided to try *Gulfpride* in my fleet of taxicabs, the result being that I am saving 50% to 60% on my motor oil bill."

"I consider *Gulfpride* as you advertise it—The World's Finest Motor Oil, and would not hesitate to recommend it to anyone . . ."—L. F. Shoemaker.

Fifty per cent saving! Almost unbelievable to users of ordinary oils—but one of the "everyday miracles" accomplished by operators of passenger, bus, and truck fleets, who are switching to *Gulfpride*.

For *Gulfpride* Oil is made by Gulf's exclusive Alchlor Process, that takes finished 100% Pennsylvania oil, and then further refines it—stripping it of as much as 20% more sludge and waste!

Savings will show up in your fleet, too—try it!

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Pittsburgh, Pa.

Gulfpride 
The World's finest motor oil
100% PURE PENNSYLVANIA . . . IN SEALED CANS ONLY

(CONTINUED FROM PAGE 84)

000; 99.22 per cent for carriers from \$100,000 to \$499,999 100.61 per cent for carriers of \$500,000 and over, while the ratio for the entire group was 99.65 per cent.

Net revenue per ton of freight for 340 carriers throughout the United States was \$.0241 in 1937 as compared to \$.1958 in 1936, according to Moore. He said that the average price of truck tires had increased 18.45 per cent during the first nine months of 1937, while the cost of tubes had risen 14.55 per cent and the cost of gasoline 5.45 per cent.

"The expenditures for the industry as a whole have already equaled and in some territory have exceeded the total receipts," Mr. Moore asserted. "There is evidence to indicate a continuation of the rise in costs. Social Security taxes have statutory provisions for increases. There no longer exists a margin within which the existing rates can absorb the increasing cost."

In emphasizing the economic need of the trucking industry, Mr. Moore produced an exhibit showing that in 1936 there was a net revenue per ton of freight handled of 19.58 cents, while in the first nine months of 1937 this had declined to 2.41 cents per ton.

Summarizing his testimony, Moore concluded:

"The present ratio of expense to receipts is practically 100 per cent. There is no margin to cover increasing expenses, improvements in service, restoration of services, contingencies, investments or profit."

"The 1937 ratio, based on nine months, is an understatement of the situation because large increases in labor costs accruing within the last few months are not fully reflected in the ratio figure."

PASSAGE of the railroad-sponsored Pettingill long-and-short haul bill by the Senate at the regular session of Congress beginning in January has been predicted by Senator Burton K. Wheeler, of Montana, Chairman of the Committee on Interstate Commerce. Wheeler, strongly opposed to the measure, said he still is against the bill but that "it is more than a one-man job to defeat it and I cannot hold it up indefinitely."

He plans to call hearings on the bill in January. The bill passed the House at the last regular session of Congress.

PRESIDENT ROOSEVELT'S move in the direction of budget balancing by suggesting curtailment of expenditures for highway construction is meeting stiff opposition in Congress.

While no protests are being raised

against any program to help balance the budget, adherents of the Federal-aid-to-highway program, which was launched in 1916, are objecting to any economy moves using the Federal-highway-aid plan as the starting point.

"If President Roosevelt wants to balance the budget and will reduce everything in proportion to roads, that's one thing," declared Wilburn Cartwright, Chairman of the House Roads Committee. "But to take it out of roads alone is something else." He added that he did not propose to take the suggestion "laying down."

And others pointed out that the plan advanced by the President would cause unemployment and discourage general contracting and manufacturing of heavy materials and equipment at a time when these industries should be stimulated.

Still others took the position that to pare the \$216,500,000 authorized for highway work for the fiscal year 1939 to \$100,000,000, as proposed by Mr. Roosevelt, would constitute a violation of what amounts to a contract with the states for matching funds raised by them for highway construction.

Adding fuel to the controversy, the Bureau of Public Roads told Congress in its annual report that present funds are insufficient to meet demands for highway construction and sound arguments for improvements because of heavier and speedier automobile traffic. It said that roads completed under its supervision in the 1937 fiscal year totaled 21,700 miles, a record for road building.

THE motor Carrier Bureau of the Interstate Commerce Commission has not as yet arranged hearings in connection with the investigation it has instituted of regulation governing sizes and weights of motor vehicles of common, contract and private carriers.

Known as Ex Parte No. MC 15, the investigation has been instituted for the following purposes, according to the ICC order:

1. To enable the Commission to make a report under the provisions of section 225 on the need for Federal regulation of the sizes and weight of motor vehicles and combinations thereof, and

2. To enable the Commission to prescribe reasonable requirements under the provisions of section 204 of the act as to the sizes and weight of motor vehicles and combinations thereof in so far as they affect safety of operation.

The inquiry is taken to indicate the ICC belief that its supervision under the Motor Carrier Act supersedes state regulation of sizes and weights with respect to safety.

CLASS I motor carriers—those having an average annual gross revenue of more than \$100,000—will operate after Jan. 1 under the new system of cost accounting recently prescribed by the Interstate Commission.

Differing somewhat from the methods prescribed by the I.C.C. for the railroads, the system provides for the unit plan of depreciation instead of the group plan. An I.C.C. statement explained the plan had been adopted temporarily "for certain classes of property for practical reasons." The statement added:

"... This is not to be regarded as an abandonment of the group principle which the commission has followed in prescribing depreciation accounting for other carriers. It is probable that in time the group plan will be adopted for motor carriers as well."

The Commission indicated a desire, however, to watch results under the new accounting system and recognized that experience may demonstrate the necessity of changes after the differences between the railroads and the motor carriers systems are observed carefully in actual operation.

A good many of the Class I carriers already employ a similar accounting system, according to the I.C.C., and those which do not can easily adapt their methods to meet the new requirements.

Pointing out that imposition of the new system on the smaller motor carriers at this time would be ill-advised, the Governmental body explained that additional funds would be required before the smaller carriers could be covered. Bureau accountants would have to be sent into the field to explain the system and put it into effect and the Commission was represented as desirous of deferring action "until it is satisfied that the system which it contemplates for the Class III carrier is sufficiently simple as to be practicable."

The new accounting system prescribed will be applicable to both omnibus and truck Class I carriers.

Campbell Is Reo Chairman

At a meeting in Lansing, Rowland Campbell of New York was elected chairman of the board of directors of the Reo Motor Car Co.

Donald E. Bates, president, said: "Rowland Campbell not only represents the largest single holdings of Reo stock but he plans to take an immediate active part in the conduct of the business."

Campbell, born in the South, was educated at the University of Chicago and later achieved distinctive success in manufacturing and merchandising enterprises in the mid-west, with offices in Chicago and New York.

LEADING THE SWING TO



MODEL EH



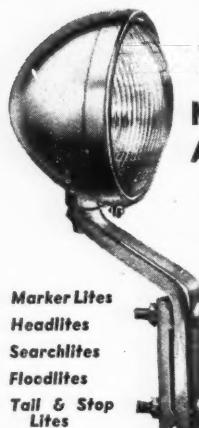
No other truck introduced in recent years has earned such overwhelming popularity as the Mack Model EH. Haulers in every line of business took to this new Mack from the start. Month after month in 1936 Model EH scored ever-mounting sales gains. Last year sales swept on to even greater heights—a clear

100% gain over the year before.

And no wonder. Here's a truck that combines price appeal with eye-appeal and adds to these the vital advantages of thorough-going Mack design and construction.

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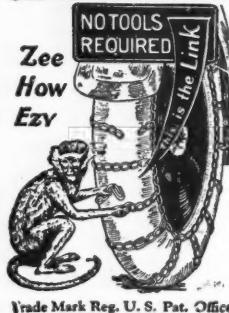
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Why Buy New Chains?

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Your chains aren't worn out when the cross links start to let go. Repair with Monkey Links. Your drivers can do it on the road. No tools required. No appreciable time lost. Chains as good as new. Save money. Increase safety. Send for your FREE SAMPLE now.

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ELECTRIC FUEL PUMP

- Uninterrupted Schedules
- Instant Starting
- Greater Economy
- No Vapor Lock
- Added Protection

AUTOPULSE CORP., DETROIT MICH.

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Ford 1938 Line

(CONTINUED FROM PAGE 38)

Brake diameter has been increased to 15½ in. with service brake operated by cable and conduit and hand brake operating on two rear wheels by rods. Front axle spindles and king pins have been increased in size and a new worm and roller steering gear with a ratio of 18.2 has been incorporated in the design.

The styling and bodies on the commercial line are new. All cabs have 3 in. more headroom and the seats have additional coil springs for comfort. Doors are wider and the control for the beam of the headlights is foot operated and a pilot light shows when the lights are on the high beam. Door sealing has been improved and the cabs are finished in a two-tone green art leather which has been rubberized and is washable.

The sedan delivery uses the standard passenger car styling, while the new station wagon has the same styling as the deluxe car.

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SAFE TOOL MFG. CO.
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POSITIVE TRACTION

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McKAY Multi-Grip Double-Bar-Reinforced Truck Chains

THE McKAY COMPANY
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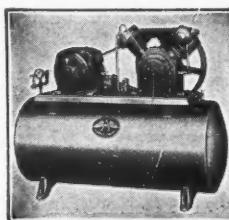
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COMMERCIAL CAR JOURNAL
JANUARY, 1938

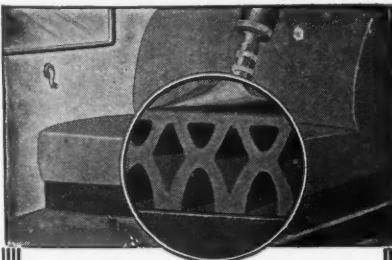
ports on the progress of this training. If the assistant still seems a promising driver, he is given final tests by the garage superintendent or his assistant. These include questions which check his knowledge of the truck and its proper care, and his knowledge of traffic rules. If one or more road driving tests are favorable, the applicant becomes an extra driver with another period of probation.

The tests of his success during this period are measured by his driving safety record; the shop maintenance record of his truck, including observance of any excessive use of gas or oil; and the efficiency of his work as proved by his daily parcel or furniture delivery sheet. Telephone calls which relate to his delivery contacts with customers also may be important.

This department gives careful attention to all such telephone calls as a check on our drivers. We should add, however, that most of our customer calls are complimentary, proving the high type of company goodwill that our drivers are developing. We assign each regular driver to a definite delivery territory, so that he may become acquainted with his regular customers. This helps him in handling return-goods and C.O.D. orders, for example. He will often be able to soothe a disgruntled customer; and prevent the return of many orders of goods.

The popularity of many of our drivers is proved by the numerous telephone calls which we get when such drivers are absent from their regular runs while on their annual vacations.

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COMMERCIAL CAR JOURNAL
JANUARY, 1938

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Or when they have been shifted temporarily to other runs, which we do several times a year for short periods, in order to make our drivers more adaptable and to broaden their knowledge of our delivery routes for possible emergency demands. During such absences customers often will telephone to inquire about the health of the old drivers and when they will return.

DURING the past two years we have been giving increasing attention to the control of our driver accidents. Proof of our success is our July, 1937, record when 186 of our drivers reported 132,875 miles without a chargeable accident, which is the best monthly no-accident record in the history of the company. Comparing our accidents for the first seven months of 1937 with the like period for 1934, there has been a decline of about 75 per cent. The number of miles per accident has increased from 8600 in 1934 to over 20,000 miles in 1936. In 1934, 42 per cent of our drivers made no-accident records; and in 1936, 73 per cent made such records.

One of the practical results from this record has been the saving of \$1,400 in our insurance costs for 1936 as compared with 1934. Another important gain has been the improved efficiency training of our drivers. Our

program to achieve these changes has included:

1. A careful health check up.
(TURN TO NEXT PAGE, PLEASE)

CUT REPLACEMENT COST WITH

KING BEE

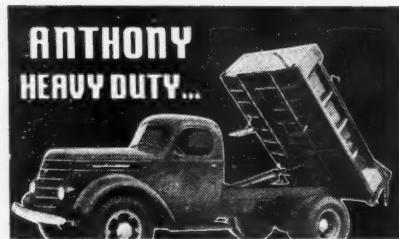
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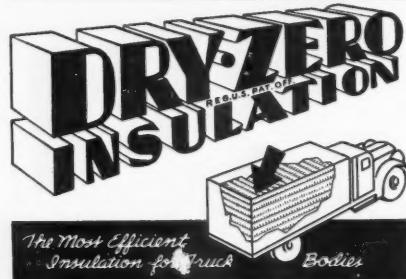
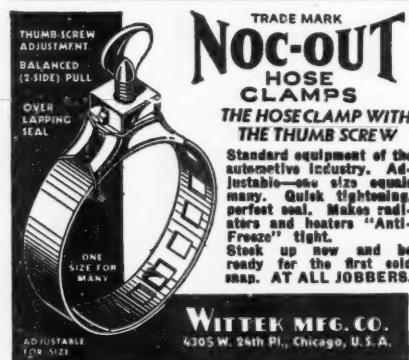
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UNIVERSAL PARTS, INC. CHICAGO



(CONTINUED FROM PAGE 89)

2. Thorough mechanical checking of our equipment.
3. Prompt follow-up of every accident which occurs.
4. More intensified safety education for our drivers.

5. New drop-frame type of body for our parcel delivery trucks which lessens driver fatigue.

We check the health of our drivers and helpers through semi-annual physical examinations, and in the follow-up of these examinations. If we find that a driver has developed defective eyesight, we assist him in making arrangements that will insure his getting the proper glasses; and he is not eligible to continue his work until he is actually wearing them. Likewise, if a driver should need considerable dental work, and if the expense should be too great for him to handle it immediately himself, we will assist him in getting a loan from our Company Credit Union which may be repaid in monthly instalments.

We have a further check on the health of our drivers through their absenteeism. If an employee is away from his work for more than three days our company visiting nurse goes to his home; and when he returns he must get a certificate from our company doctor. A further health check is through the follow-up of all our accidents; for, if an accident cause seems to relate to the driver's health we will require an immediate medical examination.

UNDER our new program all of our motor equipment is periodically checked either once a month or every 1000 miles. This is a 41-point check-up, and there is a thorough greasing job. There are other special check-ups at 5000, 10,000, 15,000 and 30,000 miles. Drivers also make daily reports on any defects in their equipment; and before leaving the garage after such a report they are expected to make certain that the ordered repairs or adjustments were made.

We follow up all driver accidents



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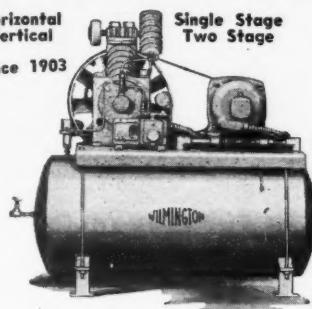
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through our so-called "Kangaroo Court" which we have maintained for about two years and which is conducted with entire seriousness. The driver is made to understand that there is no intention to "persecute" him; but that the purpose is to bring out all the facts about the accident so that he and other company drivers will be helped to avoid their repetition. The driver is permitted to select a "defensive attorney" from among our other company drivers.

The "judge" is usually myself; or my department assistant, E. R. Behnke; or our garage superintendent. A "prosecuting attorney" is selected from among a list of six drivers who are willing so to act; and on the day of the trial he is aided with a list of questions planned to help him in bringing out the known or probably facts of the case. Three other company drivers, selected at random, are the "jury."

After the jury has rendered its verdict, the members may be questioned by the "judge," to bring out their reasons for their verdict; and what they think can be done to prevent further like accidents. Their replies usually develop very interesting and valuable opinions on accident control.

Previous to the date of this writing, we have held a total of 29 such "accident trials." With the exception of a single case, the decisions of the "jury" have conformed with my own personal opinions, after having heard the facts developed in the trials.

To keep the subject of accident prevention prominently before our drivers, we have displayed in our garage a "Truck Accident" chart which shows accident curves for the three years of 1935, 1936, and 1937. With the exception of the single month of January, every monthly accident total for 1935 is well under the total for 1935. Likewise, excepting in March when there were the same number of accidents, the 1937 accident curve is well under the 1936 curve. For the month of July, the accident reports for these respective years were: 12 accidents in 1935; two accidents in 1936; and no accidents in 1937.

We also have in our garage three other accident display boards which are closely watched by all drivers. The first board is for "Furniture Drivers"; the second for "Main Parcels"; and the third for "Tractor Drivers." The first board stated (at time of this writing): "We have not had an accident for 159 days. Best previous record 54 days; accident by (name of driver). The second board indicated 62 days without an accident; and 67 days as

(TURN TO NEXT PAGE, PLEASE)

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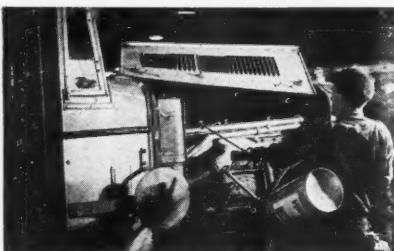
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COX MANUFACTURING CO.
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(CONTINUED FROM PAGE 91)
the best previous record. The third board indicated 137 days without an accident; and 25 days as the best previous record.

This plan keeps prominent the name of the one driver in each division who was involved in the last accident, until another accident occurs in this division. But there is one severe thing about the plan, since we know that in 49 cases out of every 50 our own driver is not responsible for the accident in which he becomes involved. The plan is very severe on the driver who is so unfortunate as to become involved in the accident that finally does break a long-extended division safety record.

For the protection of the unfortunate driver, we repeatedly warn all of our drivers that such a driver must not be "razzed" in any manner; for this driver will suffer enough, merely by having his name posted as the one who broke the division safety record.

AS a part of our educational program, all drivers are expected to familiarize themselves with our small booklet, "A Guide to Better Driving," prepared by my assistant Mr. Behnke for our Delivery Division employees.

It contains charts and condensed information on such important items as—starting the motor correctly, checking gas, oil and water, detecting and reporting carbon in motor, accelerating, describing the electric system, working of the clutch, determining location of squeaks, proper shifting of gears, judgment in driving, sudden stops, descending hills properly, avoiding bad or muddy roads, towing or being towed properly, keeping tires inflated.

We started another plan recently to lessen road failures. We assemble a small group of drivers at our central garage for a demonstration by our chief mechanic. The demonstration is mostly a method for emergency checkups and adjustments on carburetion and ignition, since these are the two chief causes of road failures. Most interestingly, following the holding of a few of these classes, there

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COMMERCIAL CAR JOURNAL
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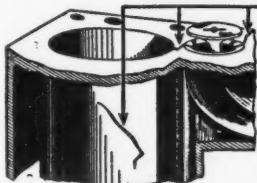
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COMMERCIAL CAR JOURNAL

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COMMERCIAL CAR JOURNAL
JANUARY, 1938

have been no more road failures. However, not all of the drivers have yet been given such instruction, and such classes will continue.

Another "round table" class is being conducted once a week to consider a variety of delivery problems in which drivers are directly or indirectly concerned. Each class is limited to 12 persons, which includes a mechanical expert from the garage, one from the office who is familiar with the records and customer telephone calls, one who assumes responsibility in sorting and loading packages, and possibly one or two other division specialists. The remainder of the group are drivers; and it is planned that all drivers ultimately will sit in on such sessions.

Other selected small groups of drivers are being sent on trips of inspection to local automobile tire manufacturing branches, to see demonstrations on what happens to truck tires from bumps, cuts, improper inflation, poor wheel alignment, etc. Also, how they may be reclaimed by retreading.

NEATNESS of appearance by our drivers is maintained through inspections every morning before the drivers leave the garage. Each driver must be freshly shaved have a neat hair cut, a clean shirt (white for parcel truck men and blue for furniture truck and tractor men), a black bow tie, a clean and pressed company uniform of trousers and blouse (excepting that the blouse may be left off during periods of hot weather). The uniform is furnished and kept cleaned and pressed by the company. Handling of furniture is most severe on clothes. A furniture driver may need new uniform trousers within three or four months, and during this period they will be pressed and cleaned perhaps every two weeks. Formerly, it was required that each driver must keep his own truck properly greased; but this requirement was abandoned in the interest of promoting neatness of the drivers, and because it was felt that the greasing job would be done more uniformly and more expertly by our garage mechanics.

(TURN TO PAGE 94, PLEASE)

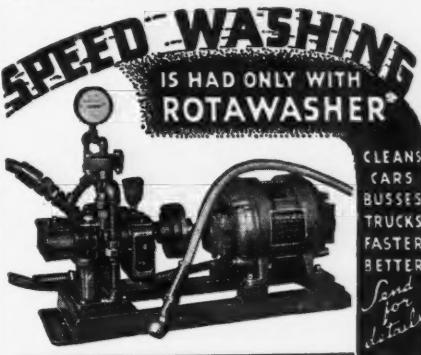
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Designed Exclusively for Truck Service TYPE T MASTER-LIGHT

Type T Master-Light mounts on cab roof, is controlled from inside by merely pointing handle. No blind spots . . . 360° . . . points any desired direction. Special device holds light in position under all conditions.

On short hauls or murder runs—in fair weather or fog—Type T Master-Light will meet your every requirement.

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(CONTINUED FROM PAGE 93)

However, each driver does load his own truck, after the packages have been assembled at the regular loading place for his truck. He thus can sort his packages for the greatest convenience in their delivery along the route with which he is familiar.

To encourage our drivers to keep their trucks always looking neat, as well as themselves, we have a monthly inspection of our trucks for neatness. The monthly prize for the best example of truck neatness is a "day off with full pay" for the prize-winning driver. The competition has become so keen that the judges always have a real task.

A suggestion box where drivers may drop written suggestions is posted in the garage. For suggestions of practical value for the improvement of management or operation, cash prizes are given. These vary from a few dollars up to \$25 or more, depending on the value of the idea to the company.

A comfortable club room is maintained at the central delivery station for the drivers. This is for idle morning periods before they start for the day, for early afternoon periods, and for the extra drivers or helpers who may be waiting. The comforts include a radio, facilities for games, a lunch counter with food at cost, lockers and shower baths.

Each morning at inspection time for the drivers, some timely safety suggestion is always passed on to them. Each year we have a safety banquet attended by some of the highest company officials. Previously, only our no-accident drivers were invited guests. But our new policy provides that all our drivers will be guests, with special honors for all no-accident drivers. Awards at previous safety banquets have included key holders and billfolds, and substantial cash gifts to drivers with the best long-time safety records. At our last banquet, two drivers were presented with checks for \$100 each—one who had driven for 12 consecutive years, 269,000 miles without an accident; and one who had none for 11 years, with 176,000 miles.



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